

## 70th Anniversary of China's Metallurgical Construction



# 2018

## SOCIAL RESPONSIBILITY REPORT

MCC, A PARTNER OF CHOICE



# About this Report

Thank you for reading the 10th Social Responsibility Report (hereinafter referred to as “**the Report**”) of Metallurgical Corporation of China Ltd. (hereinafter referred to as “**MCC**”, “**the Company**”, “**we**” or “**us**”). The Report is issued annually as a channel through which the Company can communicate with its stakeholders on its social responsibility philosophy and performance in practice. The main body of the Report includes four chapters. The first chapter describes the strategic positioning of the Company with a focus on the economic responsibility; based on corporate governance, the second chapter describes the responsibility to internal and external stakeholders; the third chapter describes the environmental responsibility of the Company from the perspective of sustainability development; the fourth chapter emphasizes on the shared value and describes the Company’s responsibility in community investment in the surrounding areas and contribution to the community development. MCC stresses the comprehensive value in economic, social and environmental development, and thus strives to explain the meaning and value of the corporate social responsibility practice from various aspects, so as to respond to the expectations and requirements of stakeholders systematically.

## Reporting References

The Report was prepared in accordance to the following guidelines:

- *Environmental, Social and Governance Reporting Guide*<sup>1</sup> of the Stock Exchange of Hong Kong Limited (hereinafter referred to as “**SEHK**”)
- *Guidelines of Shanghai Stock Exchange for Environmental Information Disclosure of Listed Companies* issued by Shanghai Stock Exchange (hereinafter referred to as “**SSE**”)

The Report was prepared with reference to the following documents:

- *Guidelines to Chinese state-owned enterprises on fulfilling corporate social responsibilities* released by the State-owned Assets Supervision and Administration Commission of the State Council (hereinafter referred to as “**SASAC**”)
- *ISO 26000: Guidance on Social Responsibility (2010)* issued by International Organization for Standards
- *GB/T 36001-2015: Guidance on Social Responsibility* Reporting by General Administration of Quality Supervision, Inspection and Quarantine of the People’s Republic of China and Standardization Administration of the People’s Republic of China
- The *GRI Standard* issued by the Global Reporting Initiative (GRI)
- *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0)* issued by Research Center for Corporate Social Responsibility, Economics Division, China Academy of Social Sciences

## Reporting Boundaries

Organization boundaries:

The Report covers MCC and its subsidiaries.

Time range:

From January 1, 2018 to December 31, 2018

## Title Description

To enhance the Report’s readability, Metallurgical Corporation of China Ltd. is referred to as “MCC”, “the Company” or “we”. In the Report, Metallurgical Corporation of China Ltd.’s controlling shareholder – China Metallurgical Group Corporation is referred to as “MCC Group”.

## Publication Medium

The Report is published in simplified Chinese, traditional Chinese and English. In case of any discrepancy, the simplified Chinese version shall prevail. The Report is released to the readers in printed edition (in recycled paper) and in PDF, and the latter can be downloaded from the website of MCC (<http://www.mcc.com.cn>).

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<sup>1</sup> The Report has complied with the “comply or explain” requirements of the *Environmental, Social and Governance Reporting Guide*.

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**1948.12** MCC devoted itself to the restoration of Ansteel which is reputed as the "cradle of China's iron and steel industry" and embarked on the epic journey of China's iron and steel industry

**1958.9.13** China's first large blast furnace-WISCO No.1 Blast Furnace was completed ahead of schedule

**1965** China's first iron and steel base with completely independent intellectual property rights - Panzhihua Iron and Steel Base started construction

**1974.9** The WISCO 1.7-meter rolling mill project started construction, and the project was hailed as "an important symbol of the modernization of China's steel industry"

**1978.12** China's No. 1 reform and opening up project - Baosteel started construction

**1980.1** The predecessor of MCC - China Construction Engineering Corporation Metallurgical Branch was established

**2000.11** MCC group was formed with China Metallurgical Construction Group Corporation as its parent company

**2008.7** MCC Group made into the Fortune Global 500 list for the first time with an annual revenue of US \$17.515 billion (2007)

**2009.9** As the main body of MCC Group, MCC was listed in Shanghai and Hong Kong Stock Exchange

**2012.9.5** The MCC Group and MCC Leaders Meeting was convened, which set MCC on the new journey of "focusing on MCC's main business and building a better MCC"

**2015.12** MCC Group and China Minmetals implemented strategic restructuring, aiming at building a world first-class metal and mineral enterprise

**2016.7** MCC Group was rated as A-level enterprise in the 2015 annual performance evaluation for central enterprise

**2018** The Study Times published the article Five Core Elements of Leading a Team by Guo Wenqing

## Message from the Chairman



We greatly appreciate the community's long-term care and support to MCC.

The year of 2018 marks the 70<sup>th</sup> anniversary of metallurgical construction in China. This is a critical year in which MCC made big strides in building a "Better MCC" featured with high technology and quality in a new era and in fulfilling its social responsibility. Guided by Xi Jinping Thought on Socialism with Chinese Characteristics in a New Era and the spirit of the 19th Communist Party of China National Congress, the Company vigorously promotes its corporate spirit of "never delaying, never slacking". With a high sprit and a hard-working style, we are actively fulfilling our social and environmental responsibilities, promoting developments of quality and efficiency, driving mutual progress between employees and the Company, facilitating harmonious social development between economic growth and environmental sustainability and successfully realizing the stage goal of building a better MCC.

We adhere to high-tech and high-quality development and enhance our value creation capabilities. In accordance with our strategic positioning of "being the national team for metallurgical construction, main force for infrastructure construction, leader of emerging industries, and committed to the path of high-tech and high-quality development", we focus on quality improvement and technological improvement and constantly improve the quality and efficiency of our operation. In 2018, the total operating income and profit of the Company have set a record while four main business sectors were all profitable for the first time. The annual operating income was 289.53 billion yuan, a year-on-year increase of 18.7%; the total profit was 9.52 billion yuan, a year-on-year increase of 6.1%. We strive to continuously strengthen our development foundation, improve enterprise vitality, fulfil responsibilities of central enterprises and build a great brand reputation.

As a national innovative enterprise, MCC is committed to driving the development of science, technology and innovation. The Company made a historic breakthrough by winning the first prize of national scientific and technological progress. With 25,000 effective patents accumulated, MCC continues to be a frontrunner among central enterprises in terms of innovation. Approved for preparing the construction of the "National Technical Standards Innovation Base", the Company has become one of the first batch of 6 international standardized innovation bases in China. Technological innovation has become the Shining business card of the Company.

We adhere to high-quality operation and enhance endogenous development momentum. As great accomplishments require ambition and tireless effort, the Company is committed to pursuing world-class projects by making unremitting efforts to strengthen project management, improve project quality, satisfy customer needs and advance brand reputation. We continuously optimize our governance structure, improve legal compliance management system, strengthen risk management and establish a robust occupational health and safety management system. The Company respects the rights and interests of employees, strengthens employee training and education, improves the overall quality of employees and channels of career development and strives to create "an ideal highland for young people, a platform for middle-aged people's entrepreneurship development and a resting harbor for the elderly."

With gratitude, we adhere to the responsibility of protecting the environment, developing ecologic civilization and promoting harmonious development with nature. The Company earnestly implements the "green sustainability" development concepts, promotes green and intelligent advancement of the steel industry and facilitates the development of green construction, striving to build a sustainable development model enterprise featuring resources conservation and environmental sustainability. Supporting the battle against pollution, the Company builds pollution source files for its subsidiaries that emit pollutants, including air pollutants, waste water, solid waste and noise. In order to monitor the latest pollution source comprehensively, the Company established a timely-updated system for pollution sources and actively cooperated with the pollution sources survey. The *MCC Green Construction Demonstration Atlas* was implemented to promote green construction management in a comprehensive manner. In 2018, we submitted 16 projects to the "National Construction Industry Green Construction Demonstration Project."

We adhere to the sharing, the governance and the prosperity and collaborate for mutually beneficial developments. In pursuit of profit maximization, the Company keeps its objectives in mind and shares development results with society. The Company focuses on integrity management and establishes extensive strategic partnerships with local government and large enterprises to achieve resources sharing and common development. We earnestly promote targeted poverty alleviation, understand characteristics and resources of the targeted area and implement effective poverty alleviation programs. The Company constantly improves communication and coordination mechanism both domestically and internationally, actively integrates with local culture to support economic development of the project location.

At MCC, we celebrate our remarkable achievements by contributing back to society. The year of 2019 will be a progressive year in which MCC will continue to promote high-tech and high-quality development. We will implement the new development concept of "innovation, coordination, green, openness and sharing" and unwaveringly "focus on MCC's main business and build a better MCC". The Company strives to be the world's best "national team" for metallurgical construction and operational services, delivers world-class systematic solutions for city and industrial development and life-cycle services for engineering projects, aiming at contributing to build a moderately prosperous society in all aspects and realize the Chinese dream of the great rejuvenation of the Chinese nation.

Chairman

（魏文清）







# About MCC

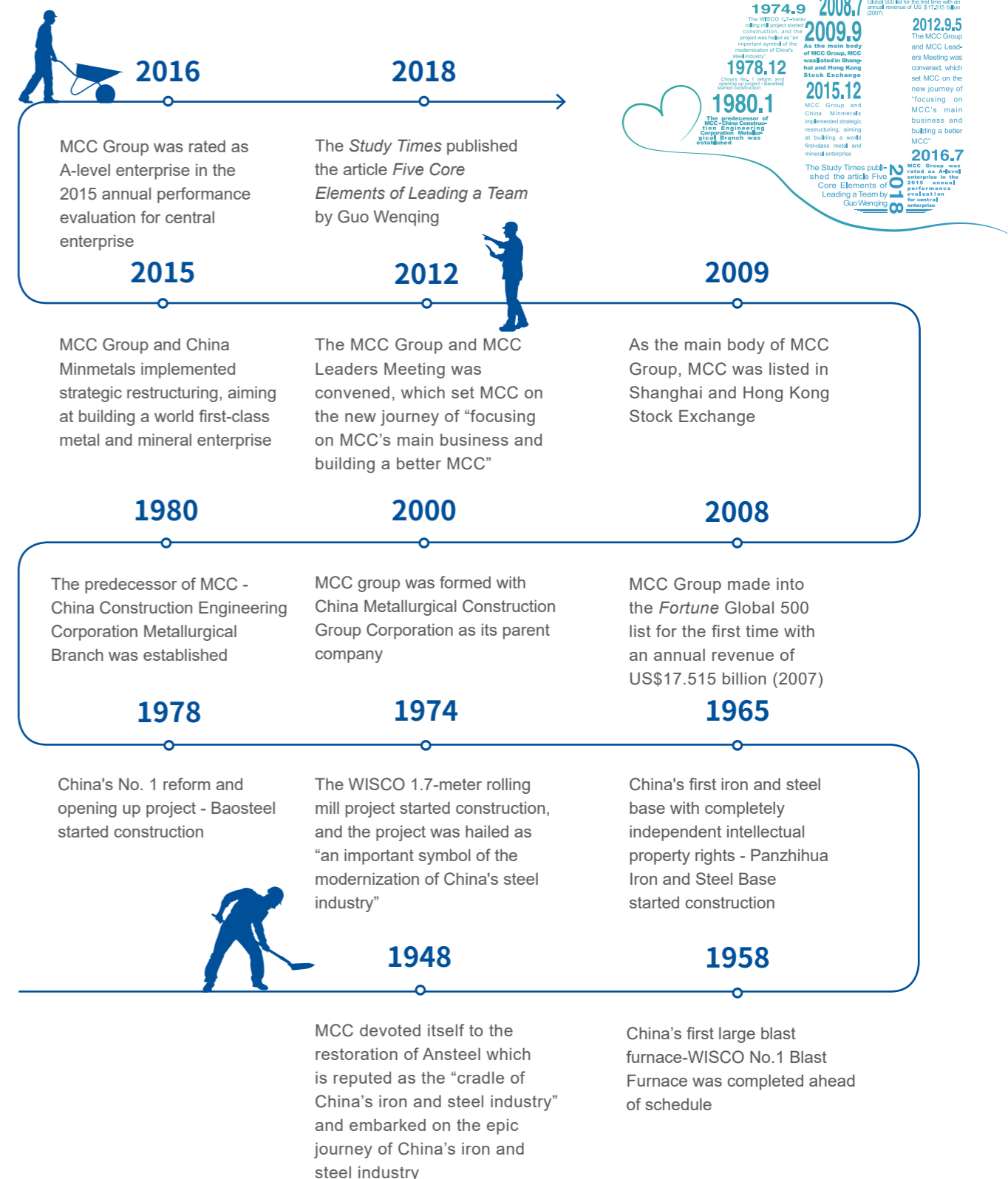
MCC is an extra-large enterprise in China. As the earliest steel industry construction strength of new China, MCC is the pioneer and main force in steel industry of China.

From the construction of “the cradle of the Chinese iron and steel industry” – Ansteel in 1948 to the construction of WISCO, Baogang group, TISCO, Pangang group, Baosteel, the Company has undertaken the planning, investigation, design and construction of the key facilities for the production of nearly all large and medium iron and steel enterprises in China, thereby making it the founder of the “iron and steel backbones” of China. Today, MCC has become the largest and strongest metallurgical construction contractor and metallurgical operation service provider in the world.

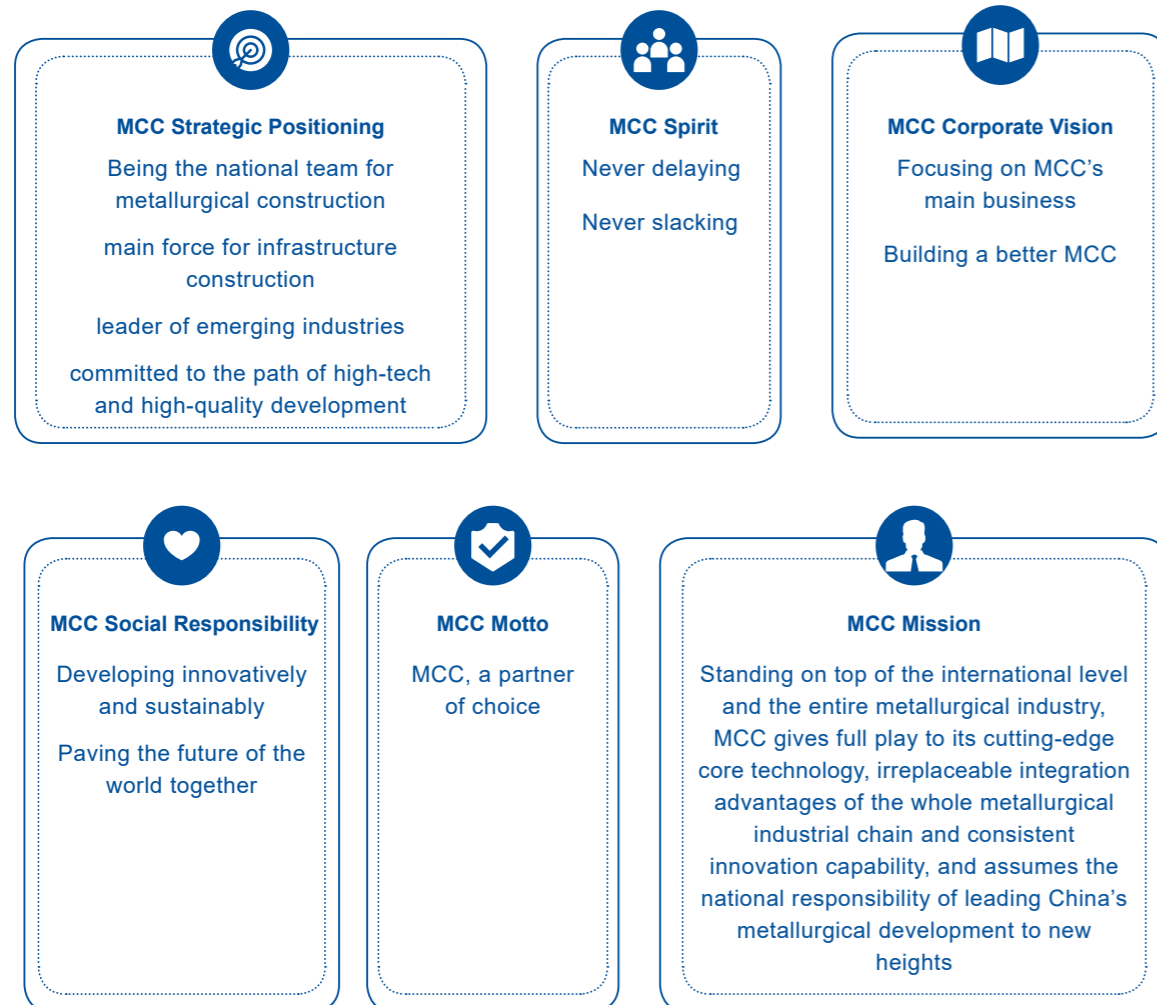
In December of 2017, MCC Group set up MCC, which was then successfully listed in Shanghai and Hong Kong in September of 2009. According to the strategic position to “being the national team for metallurgical construction, main force for infrastructure construction, leader of emerging industries, and committed to the path of high-tech and high-quality development”, MCC integrates its advantages in the best core technology and irreplaceable whole metallurgy industry chain, continuously promotes its innovation capacity and constantly assumes the national responsibility for leading China’s metallurgy to a higher level of development. Relying on the excellent abilities in research investigation, construction and service, MCC accelerates the upgrading and transformation, and establishes the integrated system of “four beams of eight pillars” to become a leading force in national infrastructure construction. Always pursuing innovation as the new engine and new driver of enterprise development, MCC undertakes the tasks of being the pioneer, innovator and leader in developing emerging industries.

			
Business Revenue	Total Profit	Total Value of newly signed contracts	The number of employees
RMB <b>289.53</b> Billion	RMB <b>9.52</b> Billion	RMB <b>665.74</b> Billion	<b>96,646</b>

## 70th Anniversary of China's Metallurgical Construction

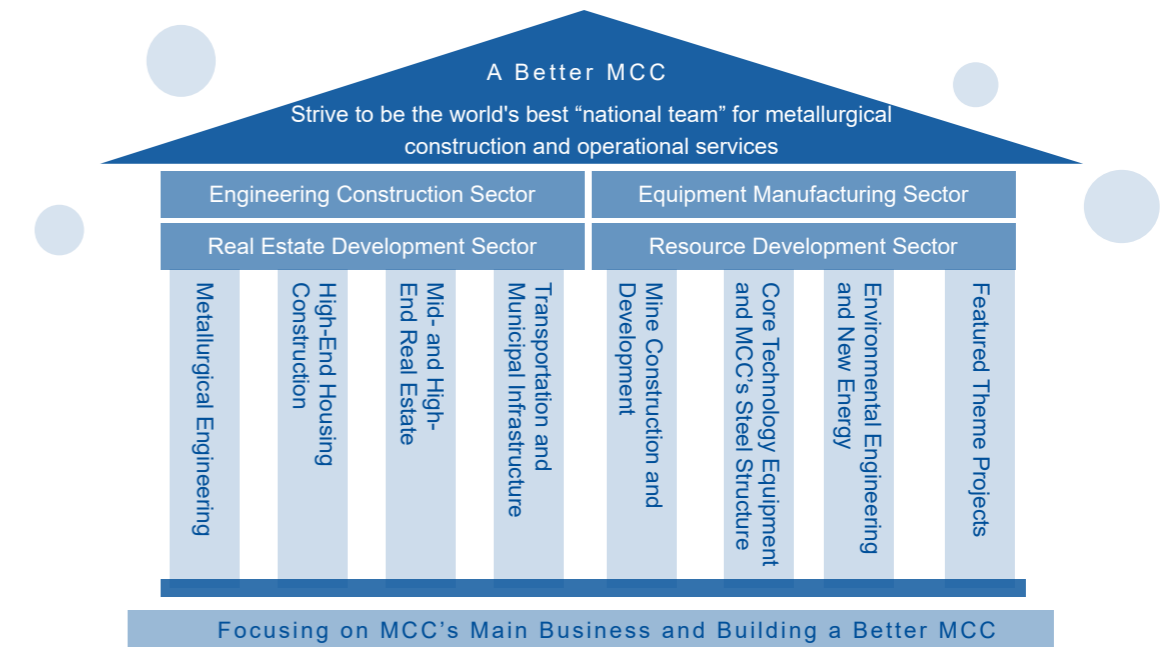


## MCC Corporate Philosophy



## MCC Business

### Industrial Structure-Four Beams and Eight Pillars



## Four Main Business Sectors

### Engineering Construction

For the engineering contracting sector, MCC is one of the largest engineering contractors in the world as well as the metallurgical engineering contractor with longest operation history and strongest professional design, construction as well as service capacities in China. Relying on the excellent capabilities in research, survey, design, construction and service, MCC actively promotes upgrading and transformation, and makes great achievements in the engineering contracting sector.

### Real Estate Development

In this sector, the Company is one of the first central enterprises with real estate being part of their principal business approved by SASAC. The real estate development brand of the Company – "MCC Real Estate" has already enjoyed a good reputation.

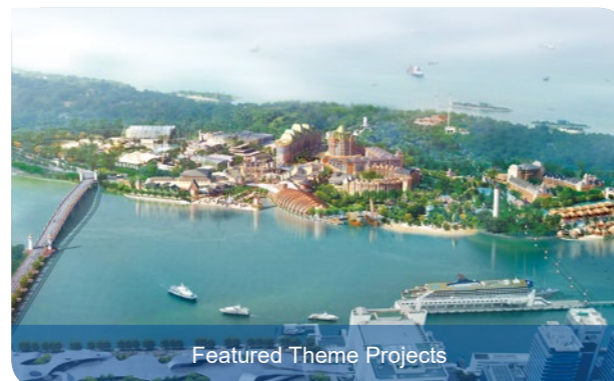
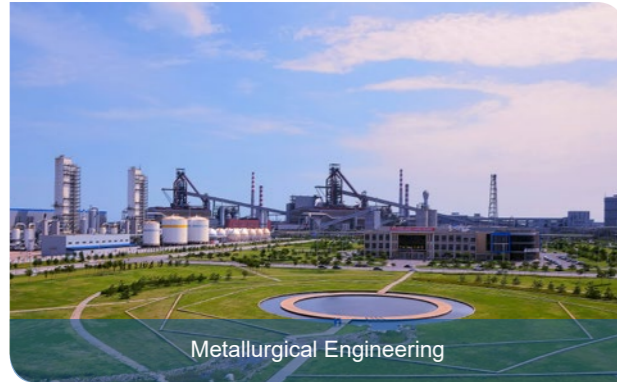
### Equipment Manufacturing

In the sector of technical equipment manufacturing, MCC is one of large manufacturing enterprises of metallurgical equipment in China that can manufacture core metallurgical equipment with its own independent intellectual property rights and produce complete sets of equipment. In the meantime, the Company is also China's largest steel structure manufacturer which leads the country in the R&D, manufacturing and installation of steel structure.

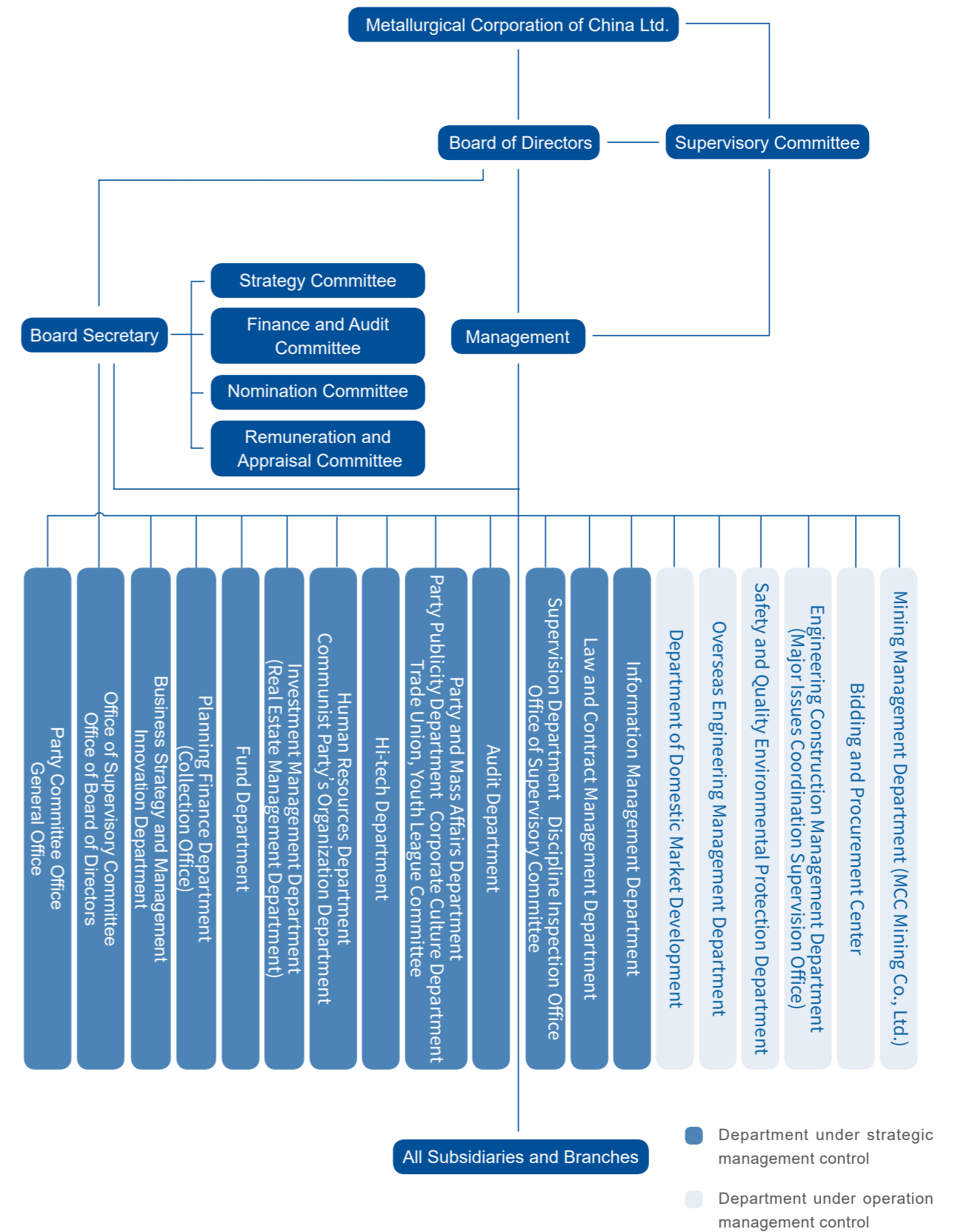
### Resources Development

In this sector, the Company is one of the large Chinese enterprises engaged in overseas resources development. It owns the mining rights of many resource development projects exploring iron ore, copper, nickel, cobalt, lead, zinc and other metal mineral resources. Besides, the Company is rated the world's Top 10 largest polysilicon production enterprises for several consecutive years, and it is an influential polysilicon production enterprise in the world.

## Eight Types of Business



## Organizational Structure

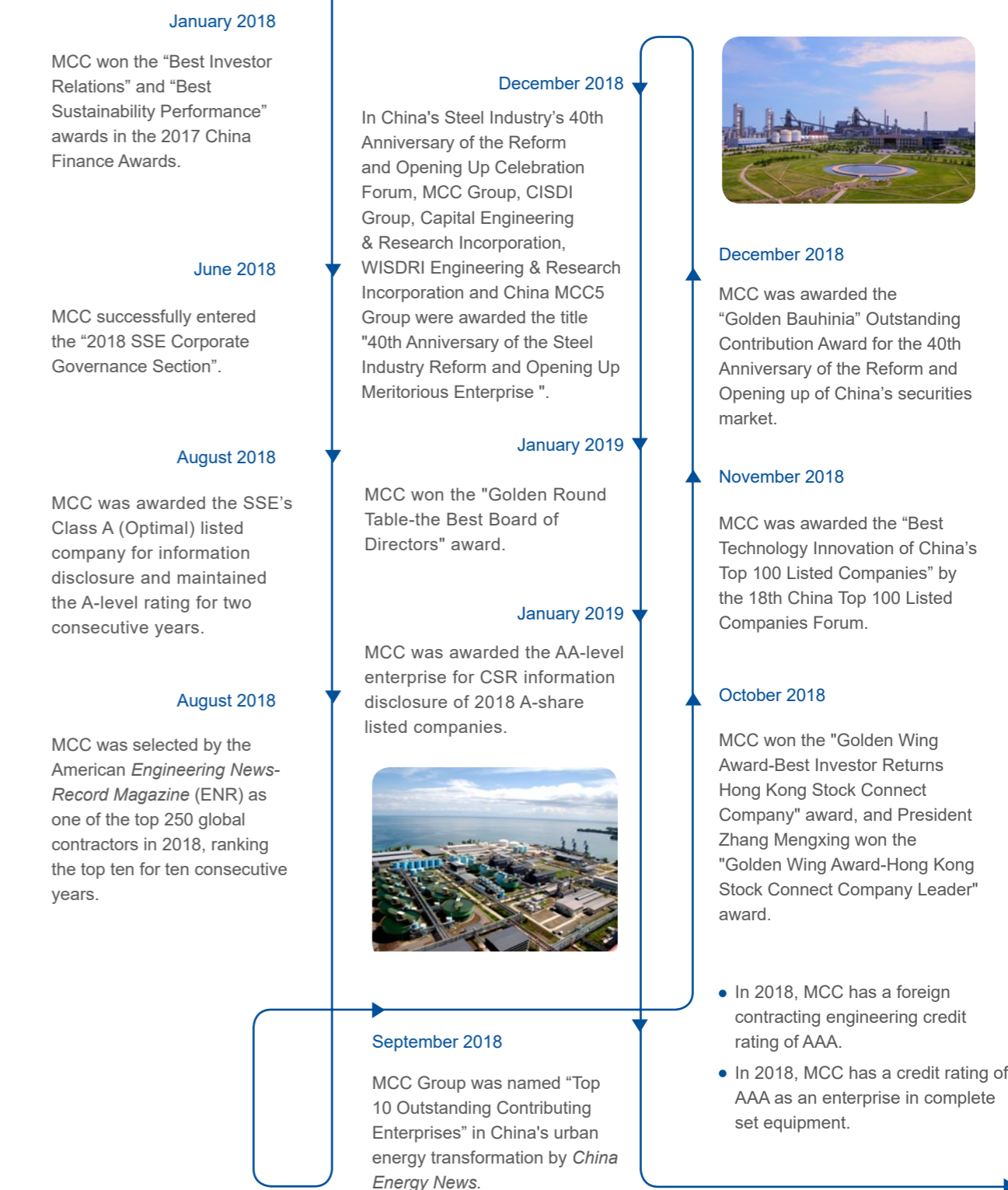


## Subsidiaries

As of December 31, 2018, the Company mainly has 46 second-tier wholly-owned and holding subsidiaries in China and abroad, which are:

Central Research Institute of Building and Construction Co., Ltd.	China Huaye Group Company Limited
Beijing Metallurgical Equipment Research Design Institute Co., Ltd.	MCC Baosteel Technology Services Co., Ltd.
China ENFI Engineering Corporation	MCC Communication Construction Group Co., Ltd.
Capital Engineering & Research Incorporation Ltd.	MCC Rail Transit Co., Ltd.
CISDI Group Co., Ltd.	MCC Inner Mongolia Construction and Investment Co., Ltd.
WISDRI Engineering & Research Incorporation Limited	Metallurgical Corporation of Central China Ltd (Henan) Branch
Huatian Engineering & Technology Corporation, MCC	MCC Utility Tunnel Science and Technology Development Co., Ltd.
ACRE Coking & Refractory Engineering Consulting Corporation, MCC	MCC Southern Construction and Investment Co., Ltd.
Zhongye Changtian International Engineering Co., Ltd.	MCC Real Estate Group Co., Ltd.
Northern Engineering & Technology Corporation, MCC	MCC Tongsin Resources Ltd.
Shen Kan Engineering & Technology Corporation	MCC Australia Holdings Pty Ltd.
MCC Wuhan Surveying-Geotechnical Research Institute Co., Ltd.	MCC Jinji Mining Development Co., Ltd.
China First Metallurgical Group Co., Ltd.	Ramu Nico Management (MCC) Limited
China Second Metallurgical Group Co., Ltd.	MCCFC Ltd.
China Third Metallurgical Group Co., Ltd.	MCC Financial and Leasing Co., Ltd.
China MCC5 Group Co., Ltd.	MCC International Engineering Group Co., Ltd.
MCC TianGong Group Corporation Limited	MCC Overseas Ltd.
China MCC17 Group Co., Ltd.	Vietnam Engineering & Technology Corporation, MCC
China Metallurgical Construction Engineering Group Co., Ltd.	China MCC International Economic and Trade Co., Ltd.
China 19th Metallurgical Corporation	MCC Holdings (Hong Kong) Co., Ltd.
China MCC20 Group Corp., Ltd.	MCC-SFRE Heavy Industry Equipment Co., Ltd.
China 22MCC Group Corporation Ltd.	MCC West Australia Mining Co., Ltd.
Shanghai Baoye Group Corp., Ltd.	China No. 13 Metallurgical Construction Co., Ltd.

## Honors and Awards of the Year



# Stakeholder Engagement

MCC adheres to our concept of social responsibility of "developing innovatively and sustainably, paving the future of the world together". While creating economic benefits, we keep on maintaining communication with our stakeholders to understand their expectations. Thus, we can be more objective at reviewing and solving issues when we formulate, manage and implement sustainable development strategies, so that we can create comprehensive value in economy, society and the environment for our stakeholders.

## Stakeholder Communication

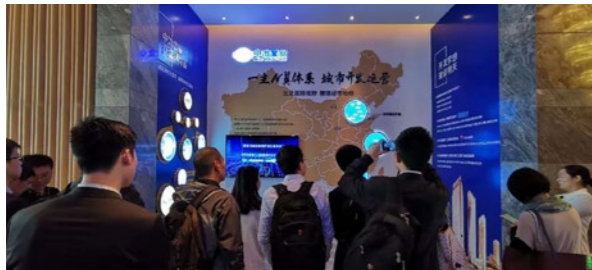
In 2018, MCC actively communicated with stakeholders through various channels and activities and listened carefully to their needs. The table below shows different stakeholders' expectations and concerns on MCC and our responses.



Stakeholders	Expectations and Concerns	Communication and Responses
 Investors	Return on investment Protection of rights and interests To know about the Company's operation	To increase profitability Shareholders meetings Roadshows Timely information disclosure
 Clients	High-quality products Improved service quality Equal and mutually beneficial cooperation	Close communication with clients To provide sufficient product and service information To enhance complaints handling mechanism
 Employees	Protection of legal rights and interests Career development platform Healthy and safe working environment	To hold congress of workers and staff regularly To establish smooth internal communication channels To improve staff training system and to provide the staff with occupational protection and physical check
 Suppliers	Win-win cooperation To be open and fair and to keep promises	Management meeting Daily communication Procurement information disclosure Regular meetings Multi-channel cooperation and research
 Government and Regulatory Institutions	Implementation of government policies and regulatory rules To maintain and increase the value of state-owned assets To operate lawfully, to pay taxes according to law and to create jobs	Implementation and Participation of the formulation of relevant policies To welcome inspection and supervision To report actively and deliver theme reports To carry out strategic cooperation
 Competitor/Industry Association	Fair competition To promote the industry's development To promote the industry's management level	To enhance research and development capabilities To participate in industry development forums
 Communities and the Public	To protect community environment To support public welfare To create job opportunities in the community To promote local economic development	To sign joint construction agreement To participate in local community development projects To Launch community charitable activities
 Media	Information disclosure and transparency	To enhance information disclosure
 Professionals	To promote development of new industries	Technology innovation To promote development of new industries



## Relationship with Investors



MCC 2018 reverse roadshow



MCC 2018 interim results announcement

MCC held several events in 2018 to communicate with its stakeholders. For example, in April and August 2018, we arranged 2017 annual results announcement, 2018 interim results announcements and relevant roadshows for investors. We also enhanced the publicity and communication's effectiveness through a variety of innovative media tools.

In 2018, By participating in industrial events, visits, attending forum meetings, MCC carried out in-depth communication with nearly 300 institutional investors in more than 100 institutions. MCC attended the domestic and foreign major brokerages and internationally renowned brokerage strategy conferences and special forums nearly 30 times and received a total of 30 visits from domestic and overseas investors.



## Brand Promotion

In order to strengthen brand promotion, we published *China Power* and *MCC Brand Story* and actively participated in various exhibitions. During the reporting period, MCC participated in the 18th China International Metallurgical Industry Exhibition and won the "Best Organization Award". MCC also participated in the ASEAN Expo-Cambodia Exhibition, Beijing-Tianjin-Hebei (Xiong'an New District) Urban Construction Expo and the 2nd Hebei Smart City Expo, China (Xi'an) Smart Transportation Expo. In addition, MCC has always actively participated in the exchanges with its peers to learn the latest developments in the industry and to interoperate on various technical or operational challenges.



## Materiality Analysis

In order to understand the impact of different sustainable development topics on the Company and its stakeholders, MCC has conducted a materiality analysis in 2018 on different sustainable development topics, in the hope of responding to stakeholders' concerns regarding our social responsibility practices through the Report. We take stakeholders' views into consideration and integrate them into the management of sustainable development of the Company.

### Materiality Analysis Process



#### Meeting and Discussion

MCC has identified key stakeholders who are closely related to the Company's operations through discussions with the management levels of each department. The stakeholders are:

- Employees
- Investors
- Clients
- Suppliers
- Government and Regulatory Institutions
- Community and the Public
- Competitors/ Industry Association
- Media
- Professionals and Regulatory Institutions



#### Questionnaire

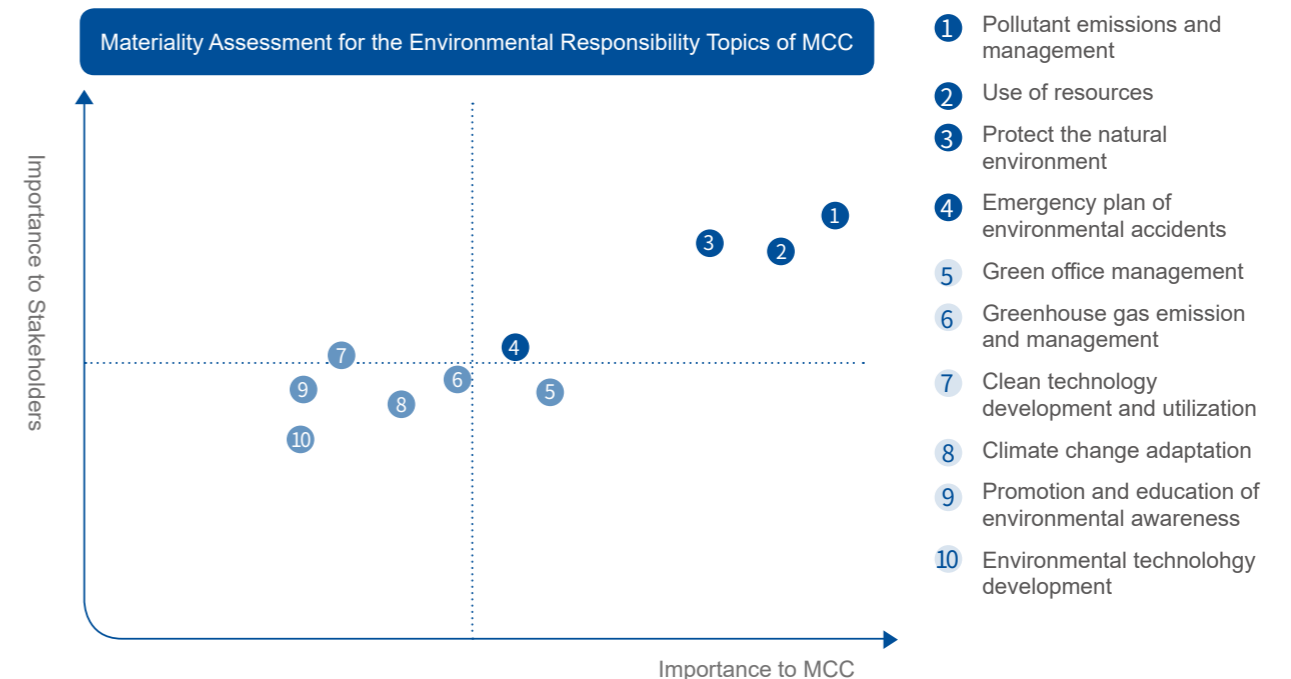
The MCC management has identified the relevant sustainability topics based on their relevancy to the Company's operation. Questionnaires were issued to the Company's key stakeholders to gather their views on the importance of different sustainability topics as well as other valuable comments.



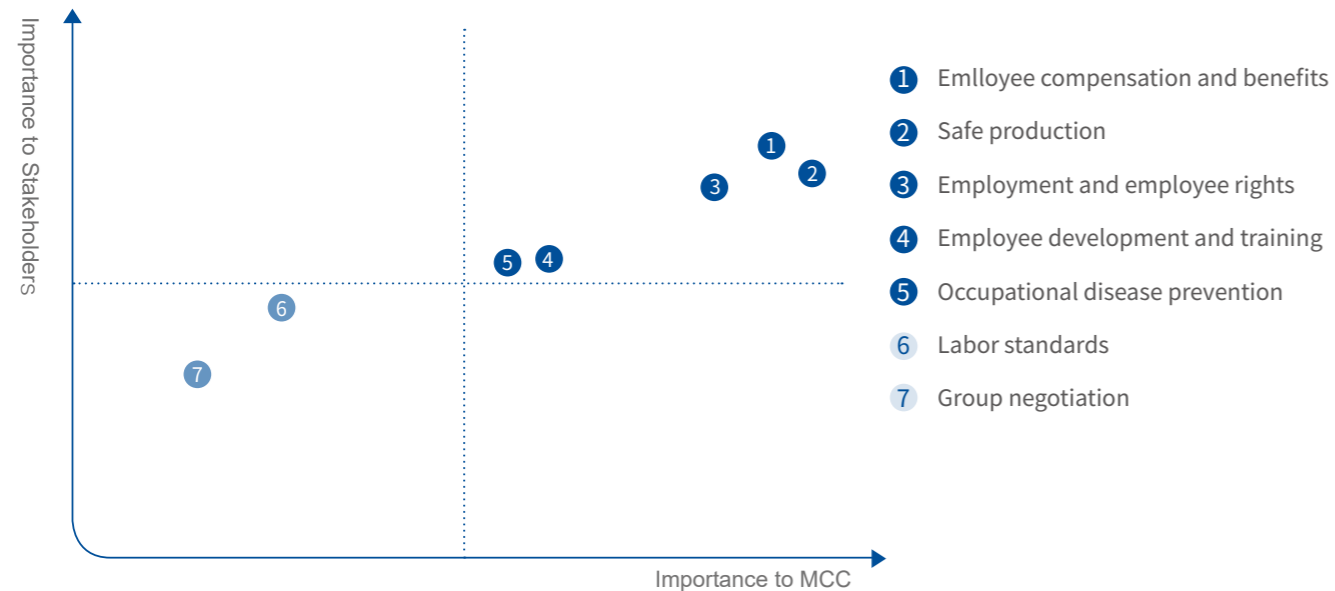
#### Result Verification

After the end of the questionnaire survey, MCC conducted a matrix analysis from the two dimensions of "importance to stakeholders" and "importance to MCC" to prioritize the importance of topics. Subsequently, the management verified the ranking results to ensure that the results were in line with the Company's actual situation.

MCC believes that environmental responsibility, labor responsibility and operational responsibility are all part of the Company's sustainable development process. Therefore, we classified the identified sustainability topics into the above three types of responsibility, and the results of the survey showed the topics we need to focus on and respond to in perspective of each responsibility. The following are matrices showing the importance of sustainability topics under the environmental responsibility, labor responsibility, and operational responsibility aspects.



Materiality Assessment for the Labor Responsibility Topics of MCC

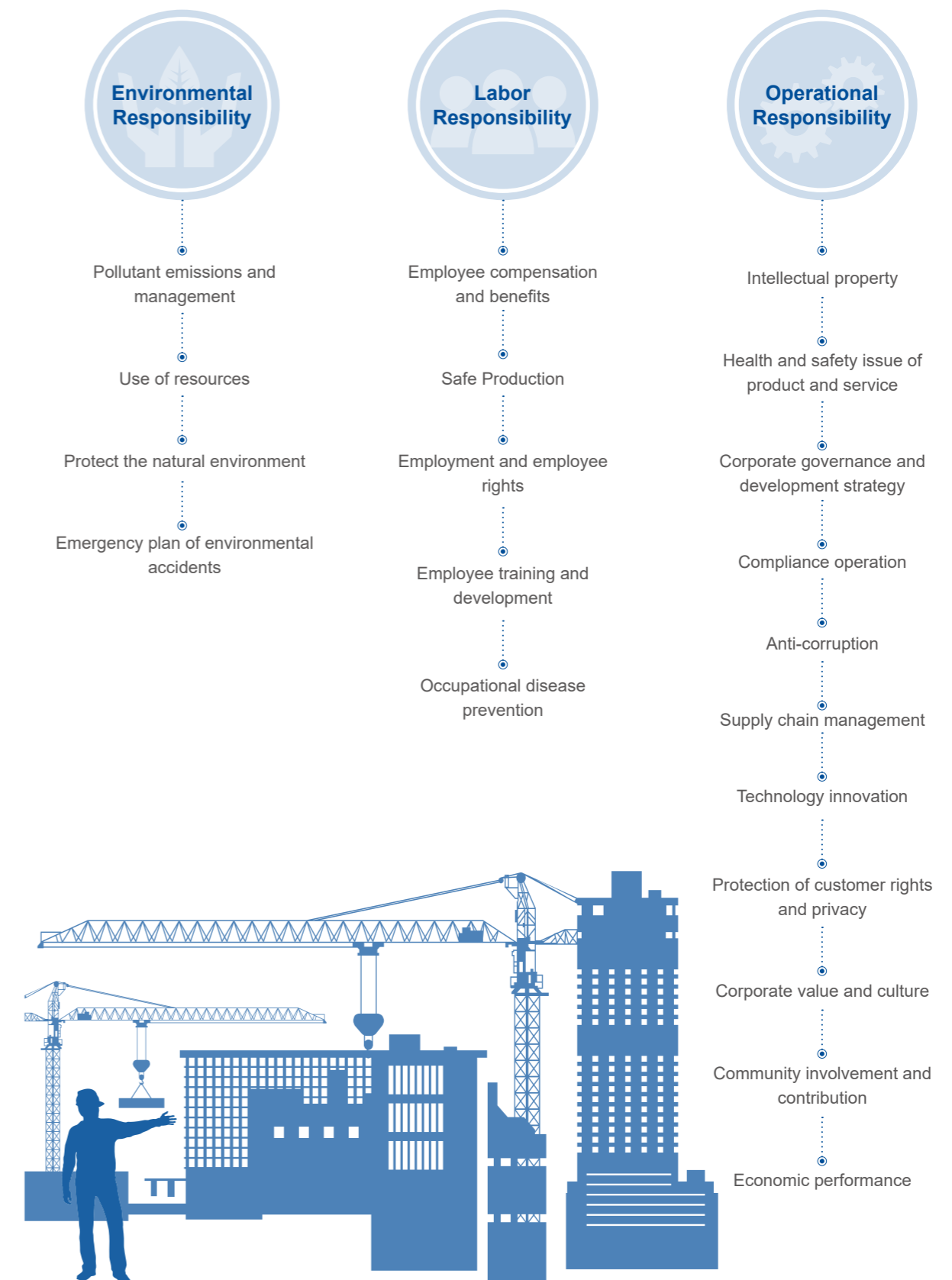


Materiality Assessment for the Operational Responsibility Topics of MCC



Based on the above matrices, the topics of each aspect are ranked according to their importance. The topics with highest materiality will be highlighted in subsequent chapters in response to the expectations and concerns of various stakeholders.

## The Topics with Highest Materiality



This chapter focuses on the following material topics concerned by stakeholders:

- Intellectual Property
- Technology Innovation
- Corporate Governance and Development Strategy
- Economic Performance



# MCC's Development Journey

In the past 70 years of metallurgical construction of new China, MCC has been operating with the vision on "Focusing on the main business of MCC and building a Better MCC". It witnessed one after another miracle of China metallurgical development and is now looking forward to the "a better MCC" goal.

In 2018, MCC focused on its strategic positioning of "being the national team for metallurgical construction, main force for infrastructure construction, leader of emerging industries, and committed to the path of high-tech and high-quality development". The Company has achieved new record in its business performance and successfully carried out "one step a year, big step in three years" on the goal of "Building a Better MCC".

Zhanjiang Iron and Steel Base Project



Total Value of Newly Signed Contracts

RMB **665.74** Billion

with 10.1% year-on-year increment



Total Value of Newly Signed Contracts of Non-steel Construction Projects

RMB **517.62** Billion

with 8.5% year-on-year increment



Lead the Metallurgical Business



Expand the Infrastructure Construction Market



Expand into the New Business



Strengthen the Technological Innovation

## Lead the Metallurgical Business

In terms of metallurgical engineering, the Company relies on the irreplaceable metallurgical industry chain integration advantages and continuous innovation capabilities, closely follows the new connotation of the strategic opportunity, focuses on the goal of "the world's best" and continues to "consolidate, enhance, improve, and penetrate". MCC also focuses on capacity replacement, urban steel relocation projects and metallurgical energy conservation and environmental protection technology transformation market, and vigorously enhances the global service capabilities of engineering, procurement and construction (hereinafter referred to as "EPC"). We vigorously enhance the ability to actively create markets, and continuously consolidate the position of the "national team for metallurgical construction".

### Domestic Market

In 2018, the Company newly signed a number of large-scale metallurgical construction projects, such as the blast furnace area's EPC general contracting project of the HBIS Group's industrial upgrading and HBIS Xuansteel's production capacity transfer project, the general contracting project of the blast furnace body and auxiliary facilities of the Fangchenggang steel base, etc. At the same time, the Company's multiple projects under construction have made important progress in 2018.

#### Case: MCC Won the Bid for HBIS Group Industrial Upgrading and HBIS Xuansteel's Production Capacity Transfer Project

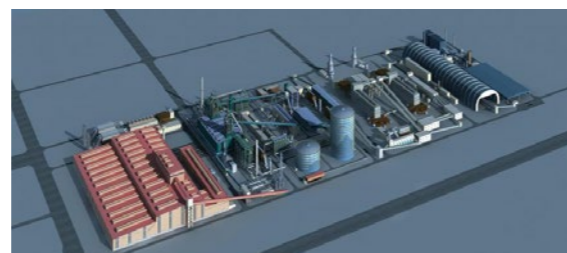
MCC won the bid for HBIS Group industrial upgrading and HBIS Xuansteel's production capacity transfer project, which is the implementation of the Beijing-Tianjin-Hebei coordinated development strategy by HBIS Group, responding to the need of the clear water and blue sky in the 2022 Winter Olympics and realizing industrial upgrading and transferring Xuangang's production capacity to the coastal areas. The project is part of major measures to build a "green, intelligent, branded" steel base.

The project is located in Leting Economic Development Zone of Tangshan City, Hebei Province. The project is constructed in two phases according to the principle of "overall planning and step-by-step implementation". The first phase will implement 8 million tons and the second phase will implement 8 million tons.



#### Case: Shanxi Jinnan Iron and Steel Project

The Shanxi Jinnan Iron and Steel Project is a full-process steel EPC project contracted by MCC with a contract value of RMB 3.0189 billion. The project covers an area of 839,100 square meters and started construction on May 17, 2018. It is expected to start production in July 2019, and the corresponding raw material systems, public auxiliary systems, sintering systems and steelmaking systems will be put into operation at the same time.



## Overseas Business

In 2018, MCC continued to expand the brand awareness and international influence of the "National Team" and won reputation and trust from many international partners by its world's leading technology.

#### Case: Malaysian Xinwu'an Steel Project

On June 29, 2018, MCC and Xinwu'an Iron and Steel Group Wen'an Iron and Steel (Malaysia) Co., Ltd. signed a general contract for the first phase of the Samalaju Joint Steel Plant. The project is an influential comprehensive steel project that MCC has acquired again in the countries along the "the Belt and Road" following the Vietnam Ha Tinh Joint Steel Plant, the Malaysian Kuantan Steel Plant and the Indonesian Dexin Steel Plant. By highly efficient and great quality work experience and past excellent performances, MCC team won the recognition and praise from clients, highlighting the strength of the "national team for metallurgical construction".



#### Case: Papua New Guinea Ramu Nickel-Cobalt Project

The Ramu Nickel-Cobalt Project is located in Papua New Guinea's Madang Province in South Pacific. It is one of the world-class resource projects invested, developed and operated by MCC.

In 2018, the nickel and cobalt production has hit a high record with an average of 108.44% production rate and cumulative production of 35,353 tons of nickel hydroxide and 3,275 tons of cobalt hydroxide. Both numbers have entered top ten global ranking. With the production costs lower than the international similar projects, the project's profitability has been significantly enhanced, achieving annual profit for the first time.



#### Case: Indonesia OBI Island Nickel Iron Project

In February 2018, the No. 4 arc furnace of the Indonesian OBI Island Nickel Iron Project has been put into operation. The project was constructed by MCC and has successfully achieved the target of opening and furnace blow in.



## Expand the Infrastructure Construction Market

In the infrastructure construction market, the Company gathers its resource advantages and closely follows the national strategy. It takes economic developed area such as the "the Belt and Road", Beijing-Tianjin-Hebei region, Yangtze River Delta region, Pearl River Delta region, Xiong'an New District, Guangdong-Hong Kong-Macao Greater Bay Area and Greater Bay Area around Hangzhou Area as the main battlefield, continues to increase market development in the infrastructure construction fields such as high-end housing construction, expressway, urban area development and transportation municipal infrastructure, and implements the basic strategy of repositioning, re-cultivation and re-upgrading of the "main force for infrastructure construction".

### Domestic Market

In 2018, MCC followed the national strategies of "the Belt and Road", the Beijing-Tianjin-Hebei coordination, the development of the Xiong'an New District, Guangdong-Hong Kong-Macao Greater Bay Area, and Greater Bay Area around Hangzhou Area, and strengthened its layout in economically developed areas and hotspots with huge economic potential, as well as promoted the development and implementation of its projects.

#### Case: The Core Project of the Beijing Winter Olympics in 2022 National Snowmobile Sled Center Project

MCC has won the bid for the National Snowmobile Sled Center project, which is the core project of the 2022 Beijing Winter Olympic Games. It is currently Asia's the third and China's the first high-strength hyperboloid shotcrete molding track. It is also the project with the highest design difficulty and the most difficult construction in the venue of the Winter Olympic Games. In 2018, the test section of the track module passed the first formal acceptance of the international organization and the first inspection of the expert inspection team at one time. Up to now, the project department has applied for 38 patents and 27 of which have been accepted, and the project has successfully been selected as the "Beijing BIM Application Demonstration Project".



#### Case: Guizhou Sanli, Sanshi and Ziwang Expressway Projects

In December 2018, after more than two years of hard construction work, MCC's largest historical investment and the first three public-private partnership (hereinafter referred to as "PPP") model expressways in Guizhou - Sanli, Sanshi and Ziwang Expressway, a total of 127 kilometers of road sections were completed one year ahead of schedule and passed the acceptance inspection.



#### Case: Chongqing Xiantao Data Valley Project

The Chongqing Xiantao Data Valley project undertaken by MCC adopts intelligent construction methods, including high-difficulty steel structure technology, spatial positioning measurement technology, and assembly technology that were deeply integrated with BIM technology and intelligent construction to ensure the quality of the project and accelerate the construction speed.



## Overseas Business

In 2018, MCC undertook a number of landmark infrastructure projects overseas.

#### Case: Singapore Metro Project

The Singapore Metro project is the first subway general contracting project undertaken by MCC in foreign countries. It has set a precedent for the Company's overseas rail transit business, marking MCC's entry into the new subway construction field in Singapore following the theme park and real estate development. It has also laid a solid foundation for the Company to further explore overseas markets.



#### Case: Sri Lanka OCH Outer Ring Expressway Project

The OCH Outer Ring Expressway project in Sri Lanka is another important expressway project undertaken by MCC in Sri Lanka. The project plays a key role in promoting economic growth and social development in the Greater Colombo region. The project started in 2016, and the project is progressing smoothly and is expected to be completed in the first half of 2019.



## Expand into the New Business

MCC has been continuously enhancing its competitiveness in emerging markets through resource integration, technology enhancement and marketing strategy transformation. In the emerging industries such as city underground pipe gallery, featured theme projects, the sponge cities, beautiful villages and smart cities, water environment and treatment, health care, theme parks, etc., we have made major breakthroughs, and we are rapidly expanding the scale of emerging industries and becoming the "leader of emerging industries".

In the field of underground pipe gallery, since 2015, the Company has won 98 PPP and general construction contracting of pipe gallery projects with a total mileage of 1,155.5 kilometers and investments of 121.12 billion yuan. In 2018, the Company won bids for the underground pipe gallery PPP and general construction contracting projects in Zhuhai, Wuhan, Gui'an New District, Shaotong and other key cities, and continued to maintain its leading position in the domestic underground pipe gallery market.

In 2018, the Company won a number of major emerging industry projects, such as the rainwater and sewage shunting EPC project of the Longgang River Basin in Shenzhen, the Ezhou City Binjiang Flood Control Ecological Restoration Project, the Beijing Universal Studios Theme Park and Resort Project, the Indonesian MNC Theme Park Project and China's Leading Primary Agricultural Products Trading Service Platform Project, etc. MCC's position as leader of emerging industries is constantly strengthening.

In the field of underground pipe gallery since 2015,

the Company has won **98** PPP and general construction contracting of pipe gallery projects

with a total mileage of **1,155.5** kilometers and investments of RMB **121.12** billion .

### Case: Beijing Universal Studios Theme Park Project

In 2018, MCC was awarded the contracts for Beijing Universal Studios, including design, construction general contracting, supervision, testing and many other projects. The Beijing Universal Studios Theme Park Project is the first in China, the third in Asia, and the sixth global Universal studios theme park in the world. This project is of great significance for shaping Beijing's international image and promoting economic development and cultural communication.



### Case: National Primary Agricultural Products Trading Service Platform

In November 2018, MCC displayed the National Primary Products Trading Service Platform at the 16th China International Agricultural Products Fair. This platform is the only national integrated primary agricultural product production and marketing docking platform. This is an important achievement of MCC's use of "Internet +", big data and intelligent technology in the agricultural field.

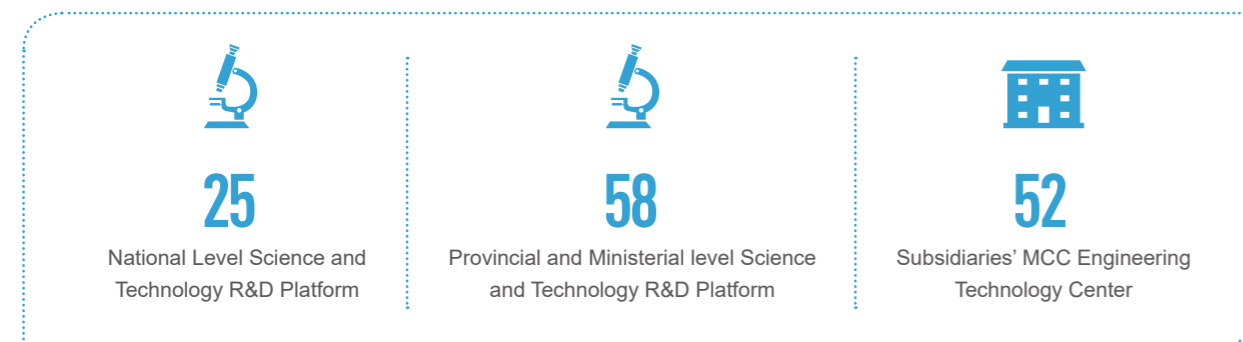
The platform is mainly engaged in online to offline (O2O) and business-to-business (B2B) transactions of primary agricultural products, providing docking services for sellers and buyers of agricultural products, addressing supply and demand docking, integrity risks, shipping loss risks, delivery time risks, payment settlement risks, etc. in the process of primary agricultural products trading. At present, more than 580 poverty-stricken counties and more than 1,500 agricultural product distributors nationwide have been incorporated into platform data management, and we are gradually guiding the implementation of agricultural products in more than 2,000 counties across the country.



## Strengthen the Technological Innovation

### Develop Technology Platforms

In 2018, MCC focused on its main business and strengthened its development on technology platform. MCC's national level science and technology R&D platform is leading in the central enterprises. The technology platforms in all levels have further consolidated MCC's technology innovation system and provided the Company with better technical support on its strategic positioning of "committed to the path of high-tech and high-quality development".



At present, international standards are increasingly becoming the key to enhancing the core competitiveness and international competitiveness of enterprises. In March 2018, the "National Technical Standard Innovation Base (International Standardization of Metallurgical Engineering)", which was undertaken by MCC, passed approval and started to be built. MCC has become the first batch of international standardization innovation bases (6 in the country) to provide a better technical support platform for promoting international steel production capacity and equipment manufacturing cooperation. In order to better promote the preparation of the innovation base, the Company established the National Technical Standards Innovation Base Council, the Expert Committee and the Secretariat in accordance with the relevant requirements of the Standardization Administration of the People's Republic of China, and also established the first batch of six professional technological standards research institutes.

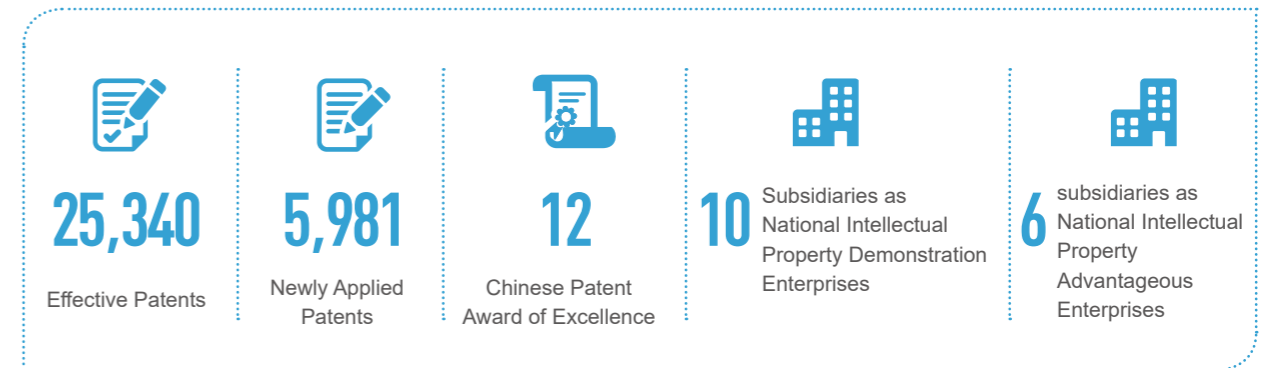


National Technical Standard Innovation Base

### Intellectual Property Management

In 2018, MCC has strictly complied with the *Patent Law of the People's Republic of China*. Subsidiaries are required to implement *Corporate Intellectual Property Management Standard* so that the protection of intellectual property rights can be infiltrated into all aspects of production and management of the Company. We also cultivated National Intellectual Property Demonstration Enterprises and Advantageous Enterprises. the Company has 10 subsidiaries as National Intellectual Property Demonstration Enterprises.

In 2018, MCC strengthened its patent layout, patent application and patent management, comprehensively reviewed 4,151 patents that have successfully been transformed into achievements and summarized the Company's 905 proprietary technologies.



### Impressive Innovation Achievements

In 2018, MCC carried out the appraisal and selection of chief experts and selected 4 chief experts of the Company and 36 chief experts in the field of professional technology (including 19 member of national metallurgical construction teams). The Company has achieved a great record again by winning a total of 18 Metallurgical Science and Technology Awards in 2018. Among the awards, 7 are first prizes (accounting for nearly half of the first prizes of the Metallurgical Science and Technology Award), breaking the record; 5 are second prizes and 6 are third prizes. The Company has also won 5 awards for the 2018 Science and Technology Progress Award by China Nonferrous Metals Industry Association, including 3 first prizes.



### Case: Intelligent Energy Control System

MCC has applied the new generation of digital technology, unattended technology, energy forecasting and scheduling models to create a comprehensive intelligent energy management and control system for the steel industry, which has realized the integrated, highly efficient and unmanned management of water, electricity, wind and gas of the steel industry. With prediction of enterprises' future energy balance and load changes, the system can effectively improve energy recycling and self-sufficiency, and thus helping enterprises save energy's outsourcing costs.



This chapter focuses on the following material topics concerned by stakeholders:

- Employee compensation and benefits
- Health and Safety Issue of Products and Services
- Protection of Customer Rights and Privacy
- Safe Production
- Corporate Governance and Development Strategy
- Corporate Values and Culture
- Employment and Employee Rights
- Compliance Operation
- Occupational Disease Prevention
- Staff Development and Training
- Anti-Corruption
- Supply Chain Management



## Striving for a Better MCC

Scientific management and effective balances are the main governance objectives of MCC. Since its listing, MCC has strictly complied with national laws and regulations. In accordance with the relevant regulations of the China Securities Regulatory Commission and other regulatory authorities, as well as the requirements of SSE and SEHK, we constantly standardize corporate governance, improve the Company's regulation system and consolidate abilities to face various risks and challenges.

On this basis, MCC considers the prospective of stakeholders and actively responds to the expectations from internal and external stakeholders such as investors, employees, partners, customers and regulatory organisations, in order to form a mutually beneficial and win-win cooperation mode.

MCC's Xinglong New Town • Redstone County



96,646

on-the-job employees



9,575,194.5

hours of safety training



30%

of safety accident reduction rate compared to 2017



Improve Corporate Governance



Talent Management



Ensure Safe Production



Lead Industrial Development



Pursue Quality Excellency

## Improve Corporate Governance

### Improve Governance Strategy

In strict accordance with requirements of the *Company Law of the People's Republic of China* and the *Securities Law of the People's Republic of China*, the Company has formulated a series of corporate governance rules since the establishment of MCC, such as the *Articles of Association*, the *Rules of Procedure of the General Meeting of Shareholders*, the *Rules of Procedure for the Board of Directors*, the *Rules of Procedure of the Supervisory Committee*, the *Working Rules of the President and the Working System of the Secretary of the Board of Directors*. At the same time, in accordance with the update of regulatory requirements and changes in the Company's actual situation, the Company's corporate governance system has been continuously improved by revising the above governance system documents in a timely manner.

In 2018, the Company further standardized the operation of each component of its corporate governance structure to safeguard the interests of all shareholders. With one year of hard work, the Company was successfully selected into the SSE's Corporate Governance Section in 2018.

### 2018 Governance Measures



## Strengthen Risk Management

Due to the wide geographical distribution of MCC's business operation, differences in national policies, market demand, climate change, etc. may have impacts and potential risks on various aspects of the Company's businesses. Therefore, the Company has established a "risk-oriented, policies-based, process-based, system-based" internal control system and a risk evaluation system that is "self-inspection combined with on-site inspection, inspection combined with auditing". The Company deeply integrates comprehensive risk management and internal control system by holistically considering various risk aspects such as strategic risk, financial risk, market risk, operational risk and legal risk. Such a risk management system forms a corresponding relationship between risk exposure points and control points, which plays a critical role in risk prevention and improves the Company's internal control management level and risk prevention level.

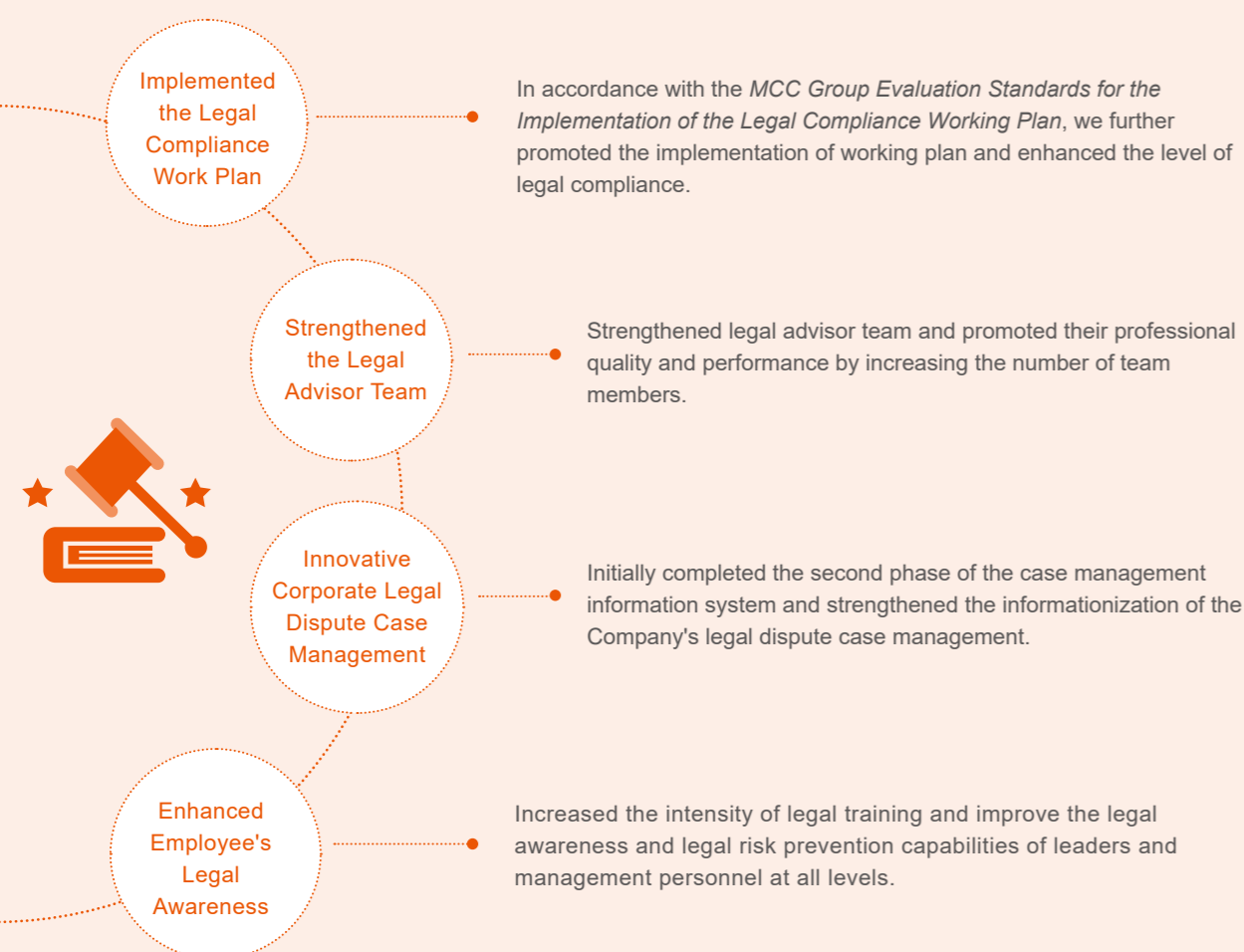
### 2018 Management Measures



## Operational Legal Compliance

MCC has implemented its legal compliance work planning according to the requirements of the SASAC, and formulated the *Administrative Measures of Legal Advisers*, the *Administrative Measures of Legal Review*, the *Administrative Measures of Major Legal Disputes*, the *Administrative Measures of External Legal Advisers* and the *Administrative Measures for Legal Representative Authorization*. In order to comprehensively promote the implementation of planning the legal compliance work of MCC, the Company further improved the risk prevention mechanism of “three measures in parallel” in 2018, which coordinated the measures of prevention, in-process control and post-incident remediation, improved the professionalization, standardization and informatization level of case management and provided legal protection for the Company's development.

### 2018 Management Measures



## Ensure Safe Production

Scientific and efficient safety management is an important prerequisite for the sustainable development of MCC. In 2018, MCC has been strictly complied with the *Work Safety Law of the People's Republic of China*, *Fire Protection Law of the People's Republic of China*, *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases* and other laws and regulations. On the basis of continuous improvement of safety production management, the Company implements the main responsibility of enterprise safety production and the main responsibility of occupational health management by further establishing a safety management system, raising awareness of safety production, strengthening safety production supervision and focusing on employees' occupational health.

### Establish Safety Management System

In order to strengthen the implementation of safety production responsibility, MCC and its subsidiaries signed the *Responsibility for Safety Production Targets* of 2018, revised the *MCC Group and MCC Comprehensive Emergency Plan for Production Safety Accidents*, upgraded *MCC Handbook of Safety Production Standardization* and compiled the *MCC Handbook of Expressway Construction Safety Production Standardization*. Through the above work, MCC further clarified the safety production assessment targets of each subsidiary, refined the responsibility assessment indicators, improved the emergency system construction and raised the standardization work requirement level of the construction site.



MCC Handbook of Safety Production Standardization



MCC Handbook of Expressway Construction Safety Production Standardization



MCC Baosteel launched Safety and Environmental Responsibility Signing Ceremony

At the same time, MCC increased its supervision of the construction site in 2018 and strengthened the investigation and mitigation of potential safety hazards on site. Through unusual time period inspections, special inspections, overseas joint inspections and district inspections, the Company actively carried out investigations on potential safety hazards at the project site and comprehensively promoted the forming of safety production standardization on the construction site. In 2018, the Company's headquarters conducted a total of 199 safety production inspections on the projects under construction of 25 subsidiaries. In response to the problems found in the inspection, the Company put forward rectification plans and required relevant personnel to submit the comparison pictures before and after the rectification to ensure that the rectification plans were put into practice.



<sup>2</sup> The statistical scope only covers the first-tier subsidiaries of MCC.



Expressway project safety special inspection



Key project safety production inspection



30%

of safety accident reduction rate compared to 2017



53

articles on safety production in the monthly magazines<sup>3</sup>

## Cultivate Safety Production Awareness

To strengthen safety training and education and to improve the management skills of safety production management personnel. MCC has conducted safety training for more than 900 managers at the headquarters of 5 subsidiaries, which further raised the safety awareness of managers.

<sup>3</sup> The statistical scope includes publications at the prefecture or city level or above.



## Case: Safety and Environmental Protection Training Conference

At the end of November 2018, MCC Group and MCC 2018 Safety and Environmental Protection Training Conference was successfully held. A total of 78 employees in charge of safety work and heads of safety supervision departments of the subsidiaries attended the conference.



MCC Group and MCC 2018 Safety and Environmental Protection Training Conference



373,034

participations of safety trainings



9,575,194.5

hours of safety training in total



153

times of safety training meetings<sup>4</sup>

At the same time, according to the requirements of the Office of the Work Safety Commission of the State Council and the China Minmetals Corporation on the 2018 "Safe Production Month" campaign, MCC organized the "Safe Production Month" campaign with the theme of "Life First, Safe Development". With promotion of the "Safe Production Month" activity, subsidiaries carried out safety promotion and education, actively organized emergency drills, safety knowledge contests and other activities to continuously raise employees' safety awareness and emergency response capabilities.



1,712

emergency rescue plans were implemented<sup>5</sup>



RMB 95.64 Million

were invested in emergency rescue related funds



3,655

times of emergency rescue drill



99,521

employees participated in emergency rescue

<sup>4</sup> The statistical scope includes publications at the prefecture or city level or above.

<sup>5</sup> The statistical scope only covers the first-tier subsidiaries of MCC.



Opening ceremony of China MCC5's "Safe Production Month" campaign



During the "Safe Production Month" campaign, MCC organized an emergency drill



MCC Baosteel 5th Safety Knowledge Contests

At the same time, the Company believes that the safety of office staff is also very important. In order to increase employees' awareness of safety and improve their self-protection abilities, MCC regularly conducts fire drills and emergency drills in the office. Through these types of activity, office staff can understand the basics of fire safety, as well as master the response to sudden fires, escape skills and the use of fire-fighting equipment.

### Case: Fire Drill at MCC Building

In the morning of September 28, 2018, all staff members of the MCC Building participated in the fire drill.



MCC Building Fire Drill

### Focus on Occupational Health Management

MCC attaches great importance to occupational health management. In 2018, MCC strengthened the prevention and treatment of occupational diseases, popularized the knowledge of occupational disease prevention, and safeguarded the health rights and interests of workers. The Company actively organized occupational disease hazard factors investigation, occupational disease hazard control and occupational disease hazard prevention and inspection. These actions effectively controlled and eliminated occupational disease hazards, continuously improved the Company's occupational health management, and we strive to create a safe and healthy working environment for employees.



China 22MCC Group Corporation's 2018 occupational health education and training session



# 138,946

participations of occupational health training



# 100%

coverage rate of employee health check-up files

## Pursue Quality Excellency

In 2018, MCC has complied with the national laws and regulations on product quality and liability, including the *Product Quality Law of the People's Republic of China*, the *Construction Law of the People's Republic of China*, the *Law of the People's Republic of China on the Protection of Consumer Rights and Interests*, the *Advertising Law of the People's Republic of China*, the *Trademark Law of the People's Republic of China*, etc. Taking "Building a Control Platform, Grasping Standardized Management, Creating Quality Projects, and Establishing an MCC Image" as the main keynote of the year, we deepened various important measures to promote the improvement of construction management and ensured that the quality of our products and services is based on legal compliance and is leading the industry average.

### Engineering Quality

In 2018, a total of 27 subsidiaries of MCC gained the quality management system certification. In order to improve the project quality management, the Company advanced the training of project managers, vigorously carried out the communication and exchange of quality engineering projects, promoted the Company's internal sharing and exchange of quality work and standardization work experience, and advanced the development of the Company's engineering quality excellence and engineering management standardization.



National Quality Management Team 40th Anniversary "Benchmark QC Team"

### 2018 Quality Honors



### 2018 Quality Management Measures

#### Carried Out Engineering Quality Supervision and Inspection

Conducted special quality inspections for transportation and municipal construction projects and special quality inspections for civil construction projects. The inspections were carried out by self-examination and area inspection with coverage of 666 key projects under construction of 26 subsidiaries. Organized subsidiaries to conduct self-inspection of overseas engineering quality. The inspection involves 92 projects under construction of 19 subsidiaries in 24 countries; performed quality supervision on key projects under construction such as Shandong Steel Group Rizhao Base and Shougang Group Jingtang Iron and Steel Co., Ltd. second phase.

Organized special training course for project managers in 2018, in which experts from famous universities and famous construction companies were invited to carry out project management training on topics such as quality control to improve project management level.

#### Promoted Project Manager Training

## Service Quality

MCC practices the concept of equality and mutual benefit throughout the whole process of cooperation with clients and actively provides client with detailed service information to protect their right to know and ensure their access to options. At the same time, MCC firmly fulfils every commitment to its clients and warrants the effective execution of the contract.

### 2018 Service Management Measures

Based on clients' needs, we provide clients with engineering projects' full lifecycle services.

#### Provided Excellent Service

#### Communicated Actively

Established regular communication mechanisms with major clients. We learnt and responded to clients' needs through communication channels such as visits, inspections, meetings, and experience exchanges. At the same time, through the Company's website, WeChat official account, mainstream media platform and other channels, we conveyed MCC culture and the progress of projects to our clients.

We attach great importance to the safety of our clients' information and actively inform clients of the purpose of using their information. We try our best to avoid leakage of clients' information. In 2018, the Company signed a total of 13 strategic cooperation agreements with major clients. Each agreement has clear information confidentiality clauses. After the agreements were signed, the paper copies of the strategic cooperation agreements were archived by the general office. Any unit or individual who wishes to borrow or inquire about the agreements must strictly follows the Company's document lending approval procedures.

#### Protected Clients' Privacy

#### Case: Education on Confidentiality and National Security and Business Training Conference

On November 7, 2018, MCC held the "Education on Confidentiality and National Security and Business Training Conference". At the meeting, employees learnt how to do a good job of protection and confidentiality at work, including the confidentiality rules required to abide by in foreign-related activities and the safe handling of information carriers.



#### Case: Changchun Longxiang International Business Center Project Won Praise from the Owners

The Changchun Longxiang International Business Center project is a large-scale urban complex project undertaken by MCC in the northern region. In 2018, the project won the "Changchun Construction Engineering Standardization Management Demonstration Site" and other awards. In the customer satisfaction survey, the project's organization management, scheduling, overall quality, safety management, environmental protection and civilized construction, cooperation with the owners, coordination with the subcontractor, etc., all have received "very satisfied" evaluation by the owners.



## Talent Management

MCC respects labor, knowledge, talents and creation. Talents as the Company's greatest advantage and wealth. In 2018, MCC has complied with the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China*, the *Employment Promotion Law of the People's Republic of China*, the *Law of the People's Republic of China on the Protection of Women's Rights and Interests*, the *Law of the People's Republic of China on the Protection of Disabled Persons*, and the *Regulations on Paid Annual Leave for employees*, etc. MCC continues to optimize the talent team, pay attention to personnel training, protect employees' rights and interests and build a harmonious corporate culture.

### Talend Culture

In 2018, MCC carried out recruitment and promotion in accordance with the institutional setting and post allocation, combined with the performance, appraisal and career development requirements of employees. Adhering to the equality, openness and ethics, the Company selects and promotes employees who are good at innovation, problem-solving, work performance and have high-level recognition. At the same time, MCC encourages its subsidiaries to continuously innovate the selection and appointment on talents and to formulate systematic promotion, assessment and reward mechanisms.

In 2018, MCC recruited 4,087 graduates on the basis of merit and also introduced 5,344 management and professional talents from the community. The recruitment has met the actual needs of corporate reform and production needs, which promoted the continuous improvement in human resource structure.

### Employee Rights

In 2018, MCC strictly complied with the laws and regulations including the *Labor Law of the People's Republic of China*, the *Provision on the Prohibition of Child Labor*, the *Law of the People's Republic of China on the Protection of Minors*, etc. MCC pursued an equal and non-discriminatory labor employment policy, opposed forced labor and prevented the use of child labor.

In addition, the remuneration package has combined with the external competitiveness and internal fairness in accordance with the principle of "job duty and performance". The social insurances and housing provident funds are paid in full and on time for employees. Employees' working hour and day-off are appropriately arranged with reference to the law. When the contract is terminated or employees are dismissed, the Company strictly implements the corresponding resignation work process to protect the legal rights and interests of employees and to maintain information security of the Company.

As of the end of 2018,  
MCC has a total number of **96,646**  
on-job employees. In which **22.4** %  
are female employees. Female  
employees are accounted for **28** %  
of the management level, and **130,063**  
retirees.

### Case: MCC's First Trade Union Member Congress and the First Employee Congress were Successfully Held

In September 2018, MCC's first Trade Union member congress and the first employee congress were successfully held in Beijing MCC Building. The congress reviewed and approved the *Implementation Measures of Employee Congress of China Metallurgical Group Co., Ltd. and Metallurgical Corporation of China Ltd.*, and the *Trade Union Working System of China Metallurgical Group Co., Ltd. and Metallurgical Corporation of China Ltd.* These policies further safeguard employees' democratic management power and provide guidance to employees to actively participate in the Company's democratic decision-making, management, and supervision.



中冶集团暨中国中冶第一次工会会员代表大会和第一次职工代表大会  
2018.9.20

**448**

Trade Unions

**782**

employees are benefited through  
Employee Assistant Programme

Invested RMB

**8,028,524.5**

for employees in difficulties

On the basis of protecting the basic rights and interests of employees, the Company also pay great attention to the work-life balance and have actively organised a variety of cultural activities for employees.



China MCC 19 Group held the 2018 staff badminton competition



MCC Zhongyuan held a weekend walking activity themed "Chinese Dream, Healthy Walk"



CISDI Group held an employees' cultural performance

## Staff Training

In 2018, MCC has carried out programmes such as special training course for project manager, training course for overseas market developer and new recruited graduates. There are total of 65,849 people participated in training with total number of 183,234 participations. The training aims to enhance the theoretical cultivation, management and technological skill.

### Case: News Writing Training Seminar



In September 2018, MCC launched the third news writing training seminar with over 100 people attended the class.

## Multiculturalism

In March 2018, Zhang Mengxing, the president of MCC, put forward requirements on overseas MCC's subsidiaries management at the Company's 2018 overseas market development meeting. For example, if there are more than 10 foreign personnel, the proportion of local staff needs to be greater than 50%. At the same time, in order to protect the diversified development of the Company, MCC has established a competitive salary and incentive mechanism to cultivate and recruit overseas talents to create the market success.

### Case: Localization Management of the Branch of MCC in Singapore

As an overseas regional center of MCC, the branch of MCC in Singapore has implemented a localized business strategy. The Company hired local personnel as required by the Singapore government by participating in local large-scale job fairs. In total of 256 executives in Singapore, 81% are Singapore residents. Meanwhile, the Singapore branch did not only limit to select talents who are Chinese, but also actively recruited talents from major local ethnic groups such as Indians and Malaysians.

On this basis, the Singapore branch has provided employees with a wealthy cultural life. The Singapore branch regularly organized group activities, such as company annual meeting, team building activities, Mid-Autumn festival dinner etc., in order to develop team spirit among employees and enhance cohesion of the Company.

Together with the diversified development, the Singapore branch adhere to the shared growth of value between enterprise and society by actively participating in social welfare undertakings. In recent years, it has donated of SGD 233,000 (about RMB 1.16 million).



The best employees selection event organised by Singapore branch

## Anti-corruption

In 2018, MCC has complied with the laws and regulations such as the *Supervision Law of the Public's Republic of China*, the *Regulation of the Communist Party of China on Disciplinary Actions*, the *Accountability Ordinance of the Communist Party of China*, and the *Regulation for the supervision and discipline enforcement of Disciplinary Inspection Agency of the Communist Party of China*. On the basis of the *Management Measures for Integrity Risk Prevention and Control of MCC* issued in 2012, MCC has formulated the *Working Plan of Integrity Risk Prevention and Control of MCC in 2018*, which is more detailed in the requirements and has higher operability. The Company requires all functional departments and subsidiaries of the headquarters to investigate, identify, diagnose the position and area that are high risk in accordance with the requirements of the *Working Plan of Integrity Risk Prevention and Control of MCC in 2018*, and establish an integrity risk information database for the Company's headquarter. At the same time, the Company actively promote the integrity risk monitoring mechanism. By integrate relevant functional departments to form a working mechanism for sharing information, problems, and achievements.

### Management Meeting

The Company organized regular meetings with relevant functional departments of subsidiaries each quarter. personnel from the Company's headquarters and subsidiary are regularly selected to get trained at the China Academy of Discipline Inspection and Supervision. The Company has also invited the executive vice president of the China Academy of Discipline Inspection and Supervision to give lectures in the Company and to improve the ability and business knowledge of relevant management personnel.



Management Meeting

## 2018 Management Measures

### Publicity and Training

In October 2018, the Company organized "Anti-corruption Publicity and Education Month" to carry out integrity education for the management level of party members. On October 31, the Company held an anti-corruption publicity and education exhibition at MCC Building and organized discipline inspection and supervision personnel from subsidiaries in Beijing to attend the exhibition.

### Case: Warning Education Video Conference

In November 2018, the Company organized a video conference on warning education. With more than 2,800 participants attended. The conference guided the Party members by showing typical cases of discipline violations.



The Company's Disciplinary Committee organized a video conference on warning education

### Channels of Whistle-blowing

The Company's Disciplinary Committee specially arranged personnel to handle petition and whistle-blowing related to corruption. The contact information such as phone number, e-mail address and mailing address are publicized on the company website. In order to protect and ensure the information security of the whistle-blowers, the Company requires the employees who handle the petition and whistle-blowing strictly comply with the work discipline, keep the work secrets and must not leak the whistle-blowers' personal information.



2,900

participations in anti-corruption training

## Lead Industrial Development

MCC adheres to the principles of open, fair, justice and merit in implementation of procurement and bidding. to actively maintains a fair competition market. Meanwhile, the Company has established a complete supplier management system and bidding management policies and equipped with corresponding supervision and evaluation mechanism. The Company strives to achieve long-term development goals of mutual progress with its partners.

### Supplier Management System

In 2018, MCC cooperated with a total of 98,366 suppliers. In order to reduce environmental and social risk in the supply chain, in 2018, the Company has adopted the following methods to regulate the procurement and bidding in order to improve supplier resources and guarantee the quality.

#### 2018 Supplier Management Measures

##### Established a Mature Management System

MCC has established a relatively complete procurement management mechanism and has formulated corresponding measures for supervising bidding and procurement. The measures have provided detailed guidance on procurement department, supervisory department responsibility, authority, monitoring and processes of supervision etc. According to the guidance, the procurement unit shall organize tender in strict accordance with the Company's bidding management system. The Discipline Inspection and Audit Management Department shall supervise the whole tendering process in accordance with the bidding management system. Other than handling tendering, the majority of the subsidiaries' procurement management department also handle other procurement progress and contract review.

The Company has disclosed the telephone number and mailbox for whistle-blowing and complaint on the procurement e-commerce platform, which has fully played the role of suppliers and other relevant parties to participate in procurement supervision.

##### Formulated a Complete Management

In order to ensure the smooth procurement progress, the Company has conducted regular review and improvement work on the existing system. In 2013, the Company issued the *Management Measures for Centralized Bidding and Purchasing of MCC*. In 2014, the Company formulated or revised eight management systems included the *Basic Procurement Management System of MCC*, the *Administrative Regulations on the Centralized Procurement of MCC*, the *Administrative Regulations on Tendering of MCC*, the *Administrative Regulations on Evaluation Expert Database and Evaluation Expert of MCC*, the *Administrative Regulations on Supplier of MCC*, the *Management Measures on the Quality of Procurement of MCC*, the *Performance Appraisal Rules on Procurement Management of the Persons in Charge of the Subsidiaries of MCC*, etc. The Company plans to revise the above eight procurement management system and is expected to be completed in the first half of 2019. At present, the revision of the *Administrative Regulations on Tendering and Bidding of MCC* has been completed.

## Avoidance of Anti-competition Practice

In the bidding process, in order to ensure fair market competition, MCC has formulated the *Management Measures on Tendering of Domestic Engineering Project of MCC* (hereinafter referred to as “**Management Measures on Tendering**”) on the basis of compliance with the *Bidding Law of the People's Republic of China* and other national laws and local regulations. According to the *Management Measures on Tendering*, it stipulates that “all subsidiaries shall maintain self-discipline in the tendering process, shall not use transferee or lease to exchange for qualification, shall not crowd out the fair competition of other bidders or damage others legitimate rights and interests”. At the same time, it also stipulates that “it is necessary to comply with the relevant regulations of the Company during the tendering process and must not bid at a malicious low price, particularly when the price is lower than the cost.” In addition, MCC has also formulated the *Regulations on the Supervision of Tendering of MCC* to supervise the tendering behaviour of MCC and its subsidiaries to ensure fair competition.



This chapter focuses on the following material topics concerned by stakeholders:

- Pollutant Emissions and Management
- Protect the Natural Environment
- Use of Resources
- Emergency Plan of Environment Accident



# Pursuing Green Development

MCC is committed to technology research and and equipment development on metallurgical engineering and new energy and environmental protection industry. It actively engages in environmental management and protection to advocate environmental conservation. The Company masters with the global advanced green technologies for soil remediation, atmospheric treatment, sewage treatment, solid waste treatment and clean energy. With respect to "MCC, A Partner of Choice" as motto, MCC actively contributes to green, harmonious and sustainable development of China.

The "Building and Maintenance Integration" Project for the "Thirteen Five-Year" Rural Highway in Qiandongnan Prefecture, Guizhou Province



Total Sulphur Dioxide Emission  
Reduced by

**28.65%**

When Comparing to 2017



Solid Waste  
Recycling Efficiency of Engineering  
Service Sector is Higher Than

**20%**



Recycled Water  
Consumption Increased by

**2.01%**

When Comparing to 2017



Environmental Management System



Development of Clean Technology



Committed to Green Operation



Environmental Accident Emergency



Ecological Impact Mitigation

## Environmental Management System

MCC has strictly complied with national and local environmental laws and regulations and has established a sound environmental management system. MCC has continued to conduct environmental performance assessments to monitor environmental risks and strive to build a better MCC.

### The major national and regional environmental laws, regulations and standards that MCC has complied with in 2018 (including but not limited to)

- ☑ *Environmental Protection Law of People's Republic of China*
- ☑ *Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes*
- ☑ *Environmental Protection Tax Law of the People's Republic of China*
- ☑ *Water Pollution Prevention and Control Law of the People's Republic of China*
- ☑ *Atmospheric Pollution Prevention and Control Law of the People's Republic of China*
- ☑ *Law of the People's Republic of China on Environmental Impact Assessment*
- ☑ *Energy Conservation Law of the People's Republic of China*
- ☑ *Interim Measures for the Supervision and Administration of Energy Conservation and Emission Reduction at Central Enterprises*
- ☑ *Integrated Emission Standard of Air Pollutants* (GB16297-1996)



In 2018, the environmental management and monitoring system has been conducted strictly throughout MCC operation. Thus, there were no cases regarding violations of national and regional environmental laws and regulations.

### Measures on the Establishment of Environment Management System in 2018

#### Strengthened environmental performance assessment

- Clarified the energy conservation target and confirm on emission reduction work and its reward and punishment measures. Supervised the subsidiaries to carry out energy conservation and emission reduction in accordance with the targets specifically.

#### All-rounded environmental management system

- In regard to strengthen the energy-saving and environmental management, MCC has established sound energy conservation and environmental protection management policies, including the *Administrative Measures on Energy Conservation and Environmental Protection of MCC*, the *Implementing Regulation on Energy Conservation Organization System and Job Responsibilities of MCC*, the *Implementation Rules of Environmental Inspection of MCC*, the *Implementation Rules on the Reporting of Energy Conservation of MCC* and MCC Group and the *Comprehensive Emergency Plan for Environmental Emergencies of MCC*, etc. These policies for air pollutants, water and land sewerage, solid waste, energy and water use, and ecological environmental protection were introduced additionally to further regulate MCC environmental management.
- Due to the diversified business and multi-locations of MCC subsidiaries, which the subsidiaries should formulate its policies that are suitable for their business nature for better environmental protection and enable to meet the requirements of the regulatory authorities.

#### Cultivated environmental awareness

- Organized education and training activities on energy conservation and emission reduction. Strengthened the teams building of energy conservation and emission reduction, promoted green office and cultivated employees' environmental awareness.

#### Established sound environmental indicator collection system

- Established a big information platform to promote the informationization of environmental data collection, so as to improve environmental and safety management standardization and supervision.



## Development of Clean Technology

Air pollution is one of the major environmental concerns in MCC during its business nature and operation processes. The Company actively responds to the government's call for fighting air pollution and pays attention to the management of gaseous pollutant emission. All subsidiaries are encouraged to upgrade their production processes and equipment, continuously innovate clean production so as to reduce air emissions and energy consumption. Beyond, the MCC subsidiaries that involve manufacturing should regularly monitor the concentration of pollutants in exhaust gas, ensuring gaseous emissions meet the requirements of relevant national laws and regulations such as the *Integrated Emission Standard of Air Pollutants* (GB16297-1996).

### Case: Development of Coking Technology

MCC has been cooperating with the University of Science and Technology Beijing and Ansteel Group Corporation Limited for more than ten years. The cooperation involves research and development on "new generation of clean and efficient coking process and equipment development" and has achieved outstanding technological innovations in clean and efficient coking process, core equipment and intelligent production. The project has developed a new generation of green coking and equipment technology that reduces coal consumption and energy efficient coking, which has been received several independent intellectual properties.

Outcomes of the research project has increased concentration level of China's coking industry by 3.8 times, reduced air pollutants by 12%, quality resources consumption reduced by 7.5% and energy consumption reduced by 4%. The achievements of the project have strategic significance for realizing high-end technology autonomy, solving environmental protection and energy dilemmas for Chinese coking industry, upgrading technology applied and coking coal resource security for Chinese steel industry. In spite of that, it has tackled the national capacity replacement issues in the coking industry and provided a strong technological ground for the construction of the "Belt and Road".



ACRE Coking & Refractory Engineering Consulting Corporation, MCC won the first prize of National Science and Technology Progress Award

### Case: Desulphurization and Denitration Technology of Low-temperature Flue Gas

The low-temperature desulfurization and denitrification technology is a multi-pollutant collaborative control technology developed by MCC and Tsinghua University with independent intellectual property rights. It provides measures to deal with the by-products of low-temperature flue gas denitrification and conventional semi-dry desulfurization. In addition to high-efficiency desulphurization, which has reached 90%, the technology can also remove nitrogen oxides from flue gas, and the denitrification efficiency is around 70% to 80%. With the processes of emission reduction, sulphur oxides and nitrogen oxides emissions can satisfy national standards whereas the operating costs are only about 40% of domestic mainstream technologies.



It has become a leading technology in the industry because of its advantages including low operating cost, reliable operation, simple operation process, easy maintenance, easy disposal of desulphurization and denitrification by-products and no secondary pollution.

## Committed to Green Operation

### Energy and Carbon Management

In the context of climate change, MCC strictly controls and manages the emissions of greenhouse gas. The Company is committed to technological innovation, reducing energy and fuel consumption during operation, and striving to reduce greenhouse gas emissions and resources consumption. To widely promote a low-carbon development mode of the Company, MCC's subsidiaries have established greenhouse gas emission accounting system and have conducted greenhouse gas emission accounting in accordance with the *Greenhouse Gas Emission Accounting Method and Reporting Guidelines* issued by the National Development and Reform Commission of the People's Republic of China.

MCC has strictly complied with the *Environmental Protection Law of the People's Republic of China* and continuous improving its management system on energy conservation and emission reduction in accordance with the relevant requirements of the *Interim Measures for the Supervision and Administration of Energy Conservation and Emission Reduction at Central Enterprises (Order No. 23 of the State-owned Assets Supervision and Administration Commission of the State Council)*. MCC has formulated the *Administrative Measures on Energy Conservation and Environmental Protection of MCC* and other systems accordingly to guide and standardize the energy conservation and environmental protection management of the subsidiaries.

In 2018, we continuously fulfilled our responsibilities on energy conservation and emission reduction. By considering our energy management operation, the following policies were launched:

#### Strong Energy Management

- Air conditioning should be set at reasonable temperature; air conditioning should be turned off when there is no staff; close the doors and windows when the air conditioning is in operation; air conditioning should not be turned on during non-working hours or holidays; regularly clean fan coil, filter and other devices of air conditioning for better energy efficiency;
- Electronic equipment can only be turned on when in use or set in energy-saving mode to reduce and avoid standby mode; employees ought to consciously turn off all types of electrical equipment after work;
- Taking advantage of natural lighting during the day to minimize lighting equipment application;
- Strictly implement the energy-saving and emission-reduction arrangements of the Company: prioritize energy-saving products and materials; eliminate energy-intensive equipment and products that are nationally prohibited; renovate and replace energy-intensive equipment;
- Calculate energy consumption for high energy consuming equipment regularly;
- Use of renewable energy at the construction site where applicable.

#### Strict Fuel Management

- Reduce diesel consumption through optimized configuration of production transport vehicles;
- Reduce energy consumption by selecting materials with a closer transportation distance;
- Disclose and confirm the fuel consumption of vehicle and its service life to determine whether the vehicle need to be scrapped based on fuel consumption intensity and assessment in environmental performance;
- Maintain the vehicles in good conditions for driving;
- Enhance the Company vehicles management system and utilized the use of vehicles. Car-pooling when necessary.

#### Active Promotion and Training on Energy Conservation and Emission Reduction

- Energy conservation and emission reduction training are held regularly or irregularly;
- Organize energy conservation and emission reduction education for advocating clean and low-carbon production and operation.

## Water Resource Management

MCC has actively promoted various water conservation policies to its subsidiaries including technological improvement, water consumption reduction, water efficiency improvement and save water from source. In addition, all manufacturing-type subsidiaries have established and implemented corresponding sewage management policies in throughout the operation and it is effectively controlled and monitored to ensure discharge of sewage meet the standards. When the construction-type subsidiaries sign the subcontracting or labor contract, in which water saving is included as an indicator. Quota of water consumption is set according to the characteristics of the construction project while water saving technologies should be adopted. For example, water reuse system or rainwater collection facility should be in used at the construction site.

Due to the diverse location of business, water scarcity is founded in some operation sites of MCC. MCC has adopted technologies such as water recycling which could effectively improve water efficiency and alleviate water scarcity into production and operation processes.

### Case: Comprehensive Sewage Treatment Technology

MCC has developed a comprehensive sewage treatment and reuse technology based on multi-stream advanced purification process for steel enterprise, which is suitable for sewage treatment and its resource recycling. The equipment covers only half of the area for conventional treatment plant and its investment is only two-thirds comparing to similar equipment from oversea. By applying the technology, sewage reduction rate could reach over 80% while water consumption could be reduced by more than 20%. At present, MCC has completed the overall steel structure optimization design, set development and serialization development, achieving an overall advancement in respect to the national level.



### Case: Treatment Technology of High-quality Reclaimed Water



One of a MCC recycling water treatment technology has been successfully operated for three years at a sewage treatment plant in Beijing. The effluent stably meets the water quality standards and has contributed significantly to minimize water pollution. Compared to the national first-A emission standard effluent, the recycling water treatment technology has reduced the concentrations of chemical oxygen demand, 5-hour biological oxygen demand, suspended solids, nitrogen content, ammonia nitrogen content and phosphorus content by 60.0%, 60.0%, 50.0%, 33.3%, 80.0% and 60.0% respectively. In addition, application of the technology is commercially beneficial since cost per ton of water treatment has reduced by more than 15% compared to conventional high-quality water treatment.

### Case: Comprehensive Recycling of Concrete and Sewage

MCC uses integrated recycling facilities to reuse concrete, sewage and slurry which has effectively recycled the concrete and water in order to reduce water consumption and emissions. The *Procedure for Comprehensive Recycling of Ready-mixed Concrete Sewage and Slurry* edited by MCC have successfully applied the "Project of Sichuan Provincial Bureau of Quality and Technical Supervision on the Release of the 2018 (Second Batch) Local Standards and Revisions Project" to make its positive contribution on environmental protection.



Sewage and slurry filter press

## Waste Disposal

MCC continuous enhancing its management and reduce the solid waste and strictly complying with the relevant regulations in the *Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes*. The "3R" principle of solid waste (reduce, reuse, recycle) is our management discipline, that we prioritize recycling to reduce solid waste generation from its source. MCC subsidiaries has also formulated management policies for solid waste. For example, China First Metallurgical Group Co., Ltd. has formulated the *Recycling and Disposal Management of Mechanical Equipment*, the *Recycling and Disposal Management of Waste Materials*, the *Administrative Measures for Residual Materials of Steel* and other policies to strengthen the management of solid waste and enhance comprehensive utilization.

## 2018 Solid Waste Management

### Non-hazardous Waste Management

Non-hazardous solid wastes generated by MCC in its daily operation process mainly include office waste, domestic waste, construction waste and residual materials. Policies and administrative measures could have strengthened non-hazardous solid waste recycling by which the recycling rate of non-hazardous solid waste in the engineering service sector is above 20%.

### Hazardous Waste Management

MCC acquired its subsidiaries to manage hazardous waste in accordance with the *Standardized Management Index System for Hazardous Waste*. Technically, measures such as setting hazardous waste identification marks and formulating hazardous waste management plans in accordance with relevant standards and regulations. Besides, hazardous solid waste reduction and the compliance of hazardous wastes disposal, we also actively explored ways of solid waste utilization for higher efficiency.

### Case: Comprehensive Utilization of Municipal Sludge

MCC invested in a centralized sludge treatment project in the urban sewage treatment plants located in Tianchang City. The first phase of the project was completed in 2018. The treatment capacity has reached 80 tons of sludge per day, and its capacity is expected to reach 160 tons sludge per day in the future (assuming the moisture content of sludge is 80%). Since its establishment on April 20, 2018 to the end of the year, the sewage treatment plant has transferred a total of 1,500 tons dried sludge with a moisture content of 60% into environmentally friendly bricks. Additionally, the sewage treatment plant also ensured that the sludges were detoxified, avoiding risks caused by secondary pollution.








Sludge dewatering equipment - frame filter press

Green Construction Management

Engineering service is the main businesses of MCC. It inevitably causes different extends of environmental impacts in operations. In order to control, mitigate or eliminate the potential environmental impacts from sources, the Company has adhered to the concept of sustainable development, promoted green construction management, and formulated the *MCC Green Construction Model Atlas*, which has adopted environmental protection into practises.

MCC pays attention to the “three wastes management” and resources utilization in construction. The “three wastes management” includes management of discharge of exhaust gas, sewage and solid waste, while resource utilization mainly focuses on energy, water resources and land resources management. Furthermore, MCC has adopted clean energy and raw materials in line with advanced technology and equipment and improved management and comprehensive utilization to reduce pollution and improved consumption efficiency from sources.

Three Waste Management	
 <b>Air Pollutants</b>	<ul style="list-style-type: none"><li>Reducing air emissions by transformation of production processes, manufacturing equipment upgrade and innovative and clean methods of production;</li><li>Regularly monitor the concentration of pollutants in exhaust gases to ensure the emissions are complied with national and local standards.</li></ul>
 <b>Sewage</b>	<ul style="list-style-type: none"><li>Formulate corresponding sewage management systems ensuring wastewater discharges meet the standards with management and control of water usage in production, living and industrial activities.</li></ul>
 <b>Solid Wastes</b>	<ul style="list-style-type: none"><li>Non-hazardous waste: more effective recycling and reusing practices;</li><li>Hazardous waste: promoting subsidiaries' regulative management of hazardous waste in accordance with the <i>Standardized Management System for Hazardous Waste</i>. For example, setting up hazardous waste identification signs, formulating hazardous waste management plans, exploring ways to recycle solid waste thus to improve the overall management level.</li></ul>

Management for the Use of Resources	
 <b>Water Resource Management</b>	<ul style="list-style-type: none"><li>Encourage technological improvements leading to water consumption reduction and higher efficiency of water consumption;</li><li>To save water from the source, signing a subcontract or labor contract with construction enterprise should involve terms of water saving indicator and the water consumption quota specified according to the characteristics of the project;</li><li>Advanced water-saving construction technology was adopted in construction;</li><li>Rainwater collection facilities were established at the construction site.</li></ul>
 <b>Energy Management</b>	<ul style="list-style-type: none"><li>The equipment is equipped with energy-saving control function;</li><li>Carrying out energy consumption accounting regularly for the major energy-consuming construction equipment;</li><li>Eliminating high energy-consuming equipment;</li><li>Shorter distance of material transportation was selected to reduce energy consumption;</li><li>Rational use of renewable energy at the construction site.</li></ul>
 <b>Land Resource Management</b>	<ul style="list-style-type: none"><li>Land use: the layout of the construction is compacted and the land occupation is minimized;</li><li>Land protection: adopting measures to prevent soil erosion; restoring vegetation after construction and reducing earth excavation and backfilling.</li></ul>

On the other hand, MCC actively promotes the application of innovative building technology. The Company's building information modelling (hereinafter referred to as "BIM") technology application has been well-known. It plays an important role in the "Belt and Road" project that producing remarkable results. Through BIM, building information can be integrated into the 3D model information database illustrates information-sharing and co-operation platform for designer teams, construction units, facilities operations departments and other parties. Consequently, it can effectively improve work efficiency and save resources and costs.

In order to solve the industrial problems and difficulties in interactive application of BIM between designers and construction enterprises, MCC has initiated its first BIM standard edition, *BIM Technology Implementation Guide for Metallurgical Engineering General Contracting Project*, which is expected to be completed in 2019.



Case: Application of BIM

In 2018, MCC had a waterworks project with a requirement of 400,000 tons water supply capacity to support water consumption for 1.25 million people within 30,000 hectares. Construction of 23 different functional construction has been involved. However, due to the complexity concern on structural design, ecological and environmental protection acquirement, it should pay attention to land use diminishment, construction time shorten, material consumption reduction and energy conservation.

With the application of BIM technology, MCC has reduced the entire design cycle from the planned 120 days into 105 day which nearly 10% of the working hours are saved and nearly 40 days of construction period. The actual land use of the project has been saved by nearly 12% comparing to the planned red line area.

This project is an excellent example for the municipal water supply projects of MCC as it provides references for the future design, construction, operation and maintenance of municipal water supply. The project has awarded the "Year in Infrastructure" in the 2018 Year in Infrastructure Conference.



## Environmental Accident Emergency

In order to effectively response to environmental emergencies and minimize the environmental impacts and property loss caused by the emergencies. All subsidiaries of MCC have formulated environmental emergency plans. For example, China ENFI has formulated the *China Silicon Corporation Ltd.—Environmental Emergency of Subsidiaries* and has recorded that in the Environmental Protection Bureau of Luoyang. Through the formulation of the *Management System for the Inspection and Reform of Hidden Danger*, MCC has organized various inspections on environmental safety hazards. In 2018, it conducted several safety and environmental emergency drills.



China Silicon Corporation conducted hazardous chemicals leakage drill

## Ecological Impact Mitigation

### Ecological Conservation

MCC operations may have affect to the ecology, geology, water and soil resources in different degrees during the operation of the engineering services and resource development. In addition to implementing various measures on energy conservation, emission reduction and green construction, MCC is committed to the protect the natural environment and strives to explore the harmonious living mode of natural, social and corporate projects. The Company has regulated all construction units to provide timely protection and restoration to trees, river systems, terrains with humanistic or historical value, so as to reduce the negative impact made to the local environment and communities.

The resources development subsidiaries have strictly followed the *Green Mine Convention*, in order to conduct mining activities properly, take actions to prevent water and soil erosion and to protect the biodiversity. After the mining work complete, we take land reclamation measures timely such as environmental greening and conservation of water and soil, so as to carry out the idea of green and sustainable development throughout the whole life cycle of the mining activities.



## Promote Environmental Education

MCC is keen on promoting environmental education, hopes to improve environmental awareness of the public and protect the beautiful natural environment while improving its own environmental management.



### Case: Education and Promotion on Environmental Awareness

In 2018, MCC actively cooperated with Urban Management and Law Enforcement of Xiangyang for a science education base in the city. It has served over 1,500 journalists and public since opening. The base relies on the waste incineration from China ENFI in Xiangyang which allow visitors to be clear on the process of turning waste into treasure, deepen the understand of the waste incineration power generation. Through display in environmental education base, visitors can experience the innovative model of “garden factory” which reflects the beautiful scene of harmony between man and nature.



From June 11, 2018 to June 17, 2018, we launched the promotional activities themed “Energy Conservation Week” and “National Low Carbon Day”. China ENFI used its “ENFI Environmental Protection” WeChat social media platform for promotion in five separate phases. In each period, the focused on was the theme of “energy saving, defending the blue sky” and “enhancing the awareness of climate change and strengthening the intensity of low-carbon actions”, which covered water and energy conservation, national low carbon days, fuel saving and green travel, etc.



“节能宣传周和全国低碳日活动”知识普及之节约用水篇  
水是“生命之源”，是地球生物赖以存在的物质基础，是维系地球生态环境可持续发展的首要条件。我国是一个严重缺水的



“节能宣传周和全国低碳日活动”知识普及之全国低碳日  
今天是全国低碳日。本年度“全国低碳日”的活动主题为“提升气候变化意识，强化低碳行动力度”。那么，大家知道“全

Note: In this chapter, the energy consumption and pollutant discharge are categorized according to business sectors including the “engineering service”, “equipment manufacturing”, “resource development” and “other industries”. The business sectors are slightly different from the sectors categorized in the 2018 Annual Report of MCC, which include the “engineering contracting”, “real estate development” “equipment manufacturing” and “resource development”. Among them, the energy consumption and emission discharge in “real estate development” sector is included in the “engineering service” sector in the Report; the energy consumption and waste discharge in environmental protection business (waste incineration and sewage treatment) of the “engineering contracting” sector as well as in nonferrous metals business (polysilicon business) of the “resource development” is included in the “other industries” sector here. The classification is to comply with the sectors classified in the monthly report of energy conservation and emission reduction. Besides, as the major engineering contracting business is conducted in China, the energy consumption and pollutant discharge data in the “engineering service” sector only covers domestic business at the moment.



"The Same Ramu, the Same Community", MCC Ramu Went Deep Into Community to Practice Its Social Responsibility  
Employees of MCC Ramu and Residents of the Community Took Photos Together Under the Rain Tree



## Building a Harmonious Community

In recent years, MCC has been actively practicing the central enterprise's corporate social responsibility. We insist on exploring and innovating charitable public welfare methods and concepts. From simple charitable poverty alleviation such as donation of money, donation of clothing and donation of goods, changing to alleviation plan with aim of improving the sustainable development ability of poverty alleviation targets, and combining the way of "ambition initiation" and "education promotion" to activate the development of poverty-stricken areas.

At the same time, MCC pursues the prosperity of the enterprise and the community in which it operates. The Company is enthusiastic about public welfare undertakings. We carry out volunteer activities and sincerely give back to the society to realize harmonious growth with local communities.



7,710

Employee Volunteers



64,754

Volunteer Hours



RMB 5.6595 Million

Poverty Alleviation Funds



Contribute to Local Community



Targeted Poverty Alleviation

## Contribute to Local Community

MCC actively seeks to the needs of the communities in which it operates and ensures to aid and support to local communities in both domestic and international operations. In 2018, MCC carried out a series of social welfare work in aspects of caring for children, helping the elderly, supporting education, etc.



MCC Baosteel employees volunteer at local community



Employees of China MCC20 visited Tangyang Town Primary School in Liangshan Prefecture to carry out public welfare activity



MCC Central Plains voluntary blood donation volunteer service activity



### Case: Venezuela Pellet Project Charity Donation

From daily communication with local workers at MCC's pellet project in Venezuela, MCC learned that prices have skyrocketed due to the currency devaluation in Venezuela in recent years, and most of the local workers' families are in economic difficulties to meet their children's needs in purchasing of new stationery before the start of school.

In August 2018, the Company purchased school backpacks and stationeries and distributed to the family of nearly 2,700 workers at the project site. We will continue to fulfil our social responsibilities in Venezuela by actively creating employment opportunities for the local community and helping workers and their families to overcome difficulties.



Venezuelan pellet project department donated school backpacks



### Honor: 2018 Chinese Enterprise Charity and Public Welfare Top 500

On November 16, 2018, the 2nd China Corporate Charity Forum was held at the Beijing Convention Center. MCC ranked No. 259 among the top 500 Chinese charities in 2018.

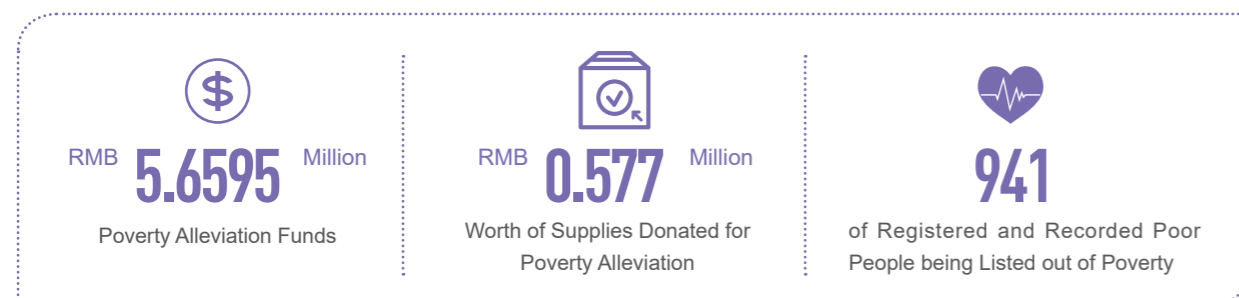


439 Times

of charity activities

## Targeted Poverty Alleviation

In the work of precision poverty alleviation, MCC always starts from the actual needs of poverty-stricken areas. MCC builds projects that are in line with local characteristics, which can exert the expertise of MCC and have "hematopoietic function" for the development of poverty-stricken areas. With such projects being executed, income and employment opportunities can be raised in poverty-stricken areas. At the same time, MCC cultivates talents in poverty-stricken areas by actively creating education and training opportunities, as we plan for the long-term interests of the local residents.



### Case: Guizhou Province Gui'an New Area Cherry Blossom Park Project

The Cherry Blossom Park project in Gui'an New Area of Guizhou Province includes three projects: Hongfeng Lake Water Source Protection Project, Environmental Renovation Project of Gaofeng Town Linglong Area, Linglong Water Town-Cherry Blossom Scenic Area Surrounding Tourist Road and Supporting Facilities Project. In 2018, MCC established more than 260 poverty alleviation booths in the local area, assisted more than 180 poor households to start businesses and created more than 200 employment opportunities.



### Case: Guizhou Province Qiandongnan Prefecture's Major People's Livelihood Project-Sansui Expressway Project Launched the "Support for Youth Football Dream" Poverty Alleviation Donation Project

In January 2018, MCC donated football, sneakers, training suits, competition suits, training equipment and other materials to students in the First Elementary School of Sansui County, Qiandongnan Prefecture. MCC did not only build a large number of transportation infrastructure in poverty-stricken areas of Guizhou Province, but also has been continuously supporting local education.



Site of donation event

### Case: Pebble for "the Last Mile" of Poverty Alleviation

"Never delaying, never slacking" is the corporate spirit of MCC. Under the leadership of this spirit, Yang Cong, the "First Secretary" selected by China First Metallurgical, worked hard and used his own words and actions to help the national-level poverty-stricken county - Dujiang Village of Yanhe County in Guizhou Province. His effort has been recognized by the villagers.

During the poverty alleviation work, Yang Cong assisted village cadres to coordinate with the town and the county to solve the problem of water supply in the village and to repair the public lighting system. In order to attract the return of the labor force and lead the poor people to support themselves, after more than 300 days and nights of exploration, Yang Cong figured that Dujiang Village is suitable for the development of tourism. MCC provides support by establishing a farmer's market for the villagers. The market provides comprehensive services for tourists to Wujiang River and serves as a resting dock for ships. Dujiang Village now has a sustained source of income.



# 2018 Key Performance Indicators

## Economic Indicators

### Key Economic Indicators

Key Indicators	2018
Business revenue	RMB 289.53 Billion
Total profits	RMB 9.52 Billion
Total value of newly signed contracts	RMB 665.74 Billion
Total value of newly signed metallurgical engineering contracts	RMB 111.07 Billion
Investments in real estate development	RMB 22.03 Billion
Equipment manufacturing business income	RMB 6.99 Billion
Resource development business income	RMB 5.28 Billion

## Environmental Indicators<sup>6</sup>

### Emissions and Relevant Statistics

Key Indicators	2018
Total emissions of SO <sub>2</sub>	22,282 (tons)
SO <sub>2</sub> emissions in resource development	21,505 (tons)
NO <sub>x</sub> emissions	1,605 (tons)
Hydrogen chloride emissions	2,449 (kg)
Dust emissions	18 (tons)
Fluoride emissions	86 (kg)

<sup>6</sup> In the environment section, the energy consumption and pollutant discharge are categorized according to business sectors including the “engineering service”, “equipment manufacturing”, “resource development” and “other industries”. The business sectors are slightly different from the sectors categorized in the 2018 Annual Report of MCC, which include the “engineering contracting”, “estate development”, “equipment manufacturing” and “resource development”. Among them, the energy consumption and waste discharge in “real estate development” sector is included in the “engineering service” sector in the Report; the energy consumption and waste discharge in environmental protection business (waste incineration and sewage treatment) of the “engineering contracting” sector as well as in nonferrous metals business (polysilicon business) of the “resource development” is included in the “other industries” sector here. The classification is to comply with the sectors classified in the monthly report of energy conservation and emission reduction.

## Emissions of Greenhouse Gas

Key Indicators	2018
Emission of greenhouse gas in China <sup>7</sup>	5,855,204 (tons)
Emission of greenhouse gas in China <sup>8</sup>	0.22 (tons/ RMB 10,000 income)
Overseas greenhouse gas emissions in resource development <sup>9</sup>	11,679,604 (tons)

## Hazardous Waste Discharge





Business sectors	Hazardous waste	Output in 2018 (unit)	Output per RMB 10,000 income (unit)
 Equipment Manufacturing	Waste oil	29,963 (L)	0.0010 (L)
	Waste paint bucket	28 (tons)	0.0010 (tons)
	emulsion	131 (tons)	0.0045 (tons)
 Other industries	Fly ash in waste incineration	16,055 (tons)	0.0006 (tons)
	Tailings	11,507,167 (tons)	0.1471 (tons)
 Resource development	Tailings in the deep-sea landfill	2,007,500 (tons)	0.6934 (tons)
	Waste oil	355,143 (L)	0.0058 (L)

<sup>7</sup> The data is from the energy conservation and emission reduction report, which covers the greenhouse gas produced in domestic production and operating activities including greenhouse gas emitted through the consumption of fuels (scope 1) and electricity (scope 2).

<sup>8</sup> The data is from the energy conservation and emission reduction report, which covers the greenhouse gas produced in domestic production and operating activities including greenhouse gas emitted through the consumption of fuels (scope 1) and electricity (scope 2).

<sup>9</sup> The data covers greenhouse gas emitted through the consumption of fuels (scope 1) and electricity (scope 2) in overseas mining and production activities. The calculation of scope 1 greenhouse gas emissions is based on relevant heating power conversion factors in *Sustainability Reporting Guidelines, Version 3.0*, and *greenhouse gas emission factors in 2006 IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2 – Stationary Combustion*; The scope 2 greenhouse gas emissions are calculated with tools according to the Greenhouse Gas Protocol.

Non-hazardous Waste Dischage

Business sector	Non-hazardous waste	Output (unit)	Output per RMB 10,000 income (unit)	Amount of recycled waste (unit)	Recycling Rate
 Engineering service	Waste concrete	551,957 (cubic meters)	0.0191 (cubic meters)	219,259 (cubic meters)	39.72%
	Waste steel	197,384 (tons)	0.0068 (tons)	44,296 (tons)	22.44%
	Waste bamboo and wood	315,280 (cubic meters)	0.0109 (cubic meters)	197,690 (cubic meters)	62.70%
 Equipment manufacturing	Leftover material	8,432 (tons)	0.0003 (tons)	2,873 (tons)	34.07%
 Other industries	Bottom ash from waste incineration	122,502 (tons)	0.0042 (tons)	122,502 (tons)	100.00%
	Sludge from wastewater treatment	284,573 (tons)	0.0098 (tons)		
 Resource development	Earth-rock stripping	11,021,639 (tons)	0.3807 (tons)		

Energy Consumption

Energy	Consumption (unit)	Consumption per RMB 10,000 income (unit)
Electricity	625,395 (10,000KWH)	0.0216 (10,000KWH)
Heating power	452,159 (MKj)	0.0156 (MKj)
Gasoline	162,540 (tons)	0.0056 (tons)
Diesel	3,658,176 (tons)	0.1263 (tons)
Natural gas	4,481 (10,000 cubic meters)	1.5478 (10,000 cubic meters)
Heavy Oil	111,379 (tons)	0.0038 (tons)

Resources Consumption

Business sector	Resource	Consumption (unit)
 Engineering service	Concrete	46,345,819 (cubic meters)
	Building blocks	17,240,353 (cubic meters)
	Steel	13,495,645 (tons)
	Timber formwork	9,336,078 (cubic meters)
 Equipment manufacturing	Steel	127,602 (tons)
	Flocculant	1,348 (tons)
 Other industries	Silicon powder	15,848 (tons)
	Antalkali	20,983 (tons)

Note: the data disclosed in this table covers the resources consumed in domestic production and operating activities.

Water Resource Consumption

Key Indicators	2018
Total water consumption (cubic metres)	52,436,944
Recycled water (cubic metres)	10,840,966
Water consumption intensity (cubic meters/RMB 10,000 income)	1.81
Emissions of COD (tons)	138
Emissions intensity of COD (tons / RMB 10,000 income)	0.0053
Emissions of ammonia nitrogen (tons)	117
Emissions intensity of ammonia nitrogen (tons / RMB 10,000 income)	0.0045

Note: The statistical scope of chemical oxygen demand and ammonia nitrogen related data in this table only covers domestic production and operation activities.

Social Indicators

Technological Innovation

Key Indicators	2018
Number of national level science and technology R&D platform	25
Number of provincial and ministerial level Science and technology R&D platform	58
Number of subsidiaries' MCC engineering technology center	52
Number of effective patents	25,340
Number of newly applied patents	5,981
Number of Chinese Patent Award of Excellence	12
Number of national intellectual property demonstration enterprises	10
Number of national intellectual property advantageous enterprise	6
Number of Metallurgical Science and Technology Award	18
Number of Science and Technology Award of China Nonferrous Metals Industry Association	5

## Health and Safety

Key Indicators	2018
Times of safety inspections conducted on projects <sup>10</sup>	7,687
Number of subsidiaries that has been inspected on safety	25
Percentage of safety accident reduction when comparing to 2017	30%
Number of articles about work safety published in monthly magazines <sup>11</sup>	53
Number of participations of safety training	373,034
Total hours of safety training	9,575,194.5
Number of safety training conducted <sup>12</sup>	153
Number of improved emergency rescue plan <sup>13</sup>	1,712
Investments in emergency rescue	9,563.64
Times of emergency rescue drills conducted	3,655
Number of participants in emergency rescue	99,521
Number of participations of occupational health training	138,946
Coverage of physical examination of employees	100%
Number of work-related fatalities	12
Number of seriously injured	1
Number of slightly injured	5
Lost days due to work-related fatalities <sup>14</sup>	72,000
Number of safety accidents	14

<sup>10</sup> The statistical scope only covers the first-tier subsidiaries of MCC

<sup>11</sup> The statistical scope includes publications at the prefecture or city level or above

<sup>12</sup> The statistical scope only covers the first-tier subsidiaries of MCC

<sup>13</sup> The statistical scope is the number of new or revised plans for 2018

<sup>14</sup> According to the *Statistical Standard of Economic Losses From Injury-fatal Accidents of Enterprise Staff and Workers*, each work-related fatality is calculated as the loss of 6,000 working days

## Responsibility on Employees

Key Indicators	2018
Number of on-the-job employees	96,646
Proportion of on-the-job employees under 35	38.8%
Proportion of on-the-job employees at the age of 36 to 40	16.6%
Proportion of on-the-job employees at the age of 41 to 45	13.5%
Proportion of on-the-job employees at the age of 46 to 50	15.7%
Proportion of on-the-job employees at the age of 51 to 55	9.7%
Proportion of on-the-job employees at the age of 56 or above	5.7%
Proportion of on-the-job employees with the master's or higher degree	10.5%
Proportion of on-the-job employees with the bachelor's degree	46.6%
Proportion of on-the-job employees with junior college education	17.5%
Proportion of on-the-job employees with technical secondary school education	8.0%
Proportion of on-the-job employees with high school education or lower	17.4%
Number of Trade Unions	448
Number of employees receiving help from the employee assistance program	782
Funds allocated to help employees in need	RMB 8.0285 million
Number of newly recruited fresh graduates	4,087
Number of newly recruited talents from society	5,344
Number of employees trained	65,849
Number of participations in anti-corruption training	2,900

## Community Investment

Key Indicators	2018
Number of employees serving as volunteers	7,710
Volunteer hours	64,754
Numbers of public welfare and charity activities	439
Funds for poverty alleviation	RMB 5.6595 million
Donated supplies for poverty alleviation converted into cash	RMB 0.577 million
Number of registered and recorded poor people being listed out of poverty	941

# Appendix

## SEHK-Environmental, Social and Governance Reporting Guide Index

A.Environmental			
General Disclosure & KPI	Indicator Description		Chapter Reference
Aspect A1: Emissions			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste		Pursuing Green Development
KPI	A1.1	The types of emissions and respective emissions data	2018 Key Performance Indicators
	A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	2018 Key Performance Indicators
	A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility)	2018 Key Performance Indicators
	A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	2018 Key Performance Indicators
	A1.5	Description of measures to mitigate emissions and results achieved	Committed to Green Operation
	A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved	Committed to Green Operation
Aspect A2: Use of Resources			
General Disclosure	Policies on the efficient use of resources		Pursuing Green Development
KPI	A2.1	Direct/ indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility)	2018 Key Performance Indicators
	A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility)	2018 Key Performance Indicators
	A2.3	Description of energy use efficiency initiatives and results achieved	Committed to Green Operation
	A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved	Committed to Green Operation
	A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	Since our main business does not use packaging materials, this KPI is not applicable
Aspect A3: The Environmental and Natural Resources			
General Disclosure	Policies on minimizing the issuer's significant impact on the environment and natural resources		Pursuing Green Development
KPI	A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	Ecological Impact Mitigation

B.Social				
General Disclosure & KPI		Indicator Description		Chapter Reference
Aspect B1: Employment				
General Disclosure		Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare		Talent Management
KPI	B1.1	Total workforce by gender, employment type, age group and geographical region		2018 Key Performance Indicators
	B1.2	Employee turnover rate by gender, age group and geographical region		This KPI is less material according to materiality assessment
Aspect B2: Health and Safety				
General Disclosure		Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards		Ensure Safe Production
KPI	B2.1	Number and rate of work-related fatalities		2018 Key Performance Indicators
	B2.2	Lost days due to work injury		2018 Key Performance Indicators
	B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored		Ensure Safe Production
Aspect B3: Development and Training				
General Disclosure		Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities		Talent Management
KPI	B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management)		Considering future disclosures
	B3.2	The average training hours completed per employee by gender and employee category		Considering future disclosures
Aspect B4: Labor Standards				
General Disclosure		Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labor		Talent Management
KPI	B4.1	Description of measures to review employment practices to avoid child and forced labor		This KPI is less material according to materiality assessment
	B4.2	Description of steps taken to eliminate such practices when discovered		This KPI is less material according to materiality assessment

Aspect B5: Supply Chain Management			
General Disclosure	Policies on managing environmental and social risks of the supply chain		Lead Industrial Development
KPI	B5.1	Number of Suppliers by geographical region	This KPI is less material according to materiality assessment
	B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored	Lead Industrial Development
Aspect B6: Product Responsibility			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress		Pursue Quality Excellency  Issues related to advertising and labelling of engineering service are not applicable since the sector is mainly serving the equipment manufacturing sector of the Company
KPI	B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	This KPI is less material according to materiality assessment
	B6.2	Number of products and service related complaints received and how they are dealt with	This KPI is less material according to materiality assessment
	B6.3	Description of practices relating to observing and protecting intellectual property rights	Strengthen the Technological Innovation
	B6.4	Description of quality assurance process and recall procedures	Pursue Quality Excellency Product recall procedure is less material according to materiality assessment
	B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored	Pursue Quality Excellency
Aspect B7: Anti-corruption			
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering		Talent Management
KPI	B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	Considering future disclosures
	B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	Talent Management

Aspect B8: Community Investment			
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests		Building a Harmonious Community
KPI	B8.1	Focus areas of contribution (e.g. education, environmental concerns, labor needs, health, culture, sport)	Contribute to Local Community
	B8.2	Resources contributed (e.g. money or time) to the focus area	2018 Key Performance Indicators

SEE-Guidelines on Preparation of Report on Company’s Fulfillment of Social Responsibilities Index

Disclosure requirements	Page reference
Promotion of social sustainability development	Pursuing Green Development
To protect employees' health and safety	2018 Key Performance Indicators
To protect and support the community	Clean Technology Innovation
To check the quality of products	Committed to Green Operation 2018 Key Performance Indicators
Promotion of environmental and ecological sustainability development	Clean Technology Innovation Committed to Green Operation
How to prevent and reduce pollution	Committed to Green Operation
How to protect water resources and energy	There was no record in 2018

# Reader Feedback Form

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Dear reader :

Thank you for reading the 2018 CSR Report of Metallurgical Corporation of China Ltd. We highly value and expect your valuable opinions on MCC's CSR fulfillment and this CSR report. Your opinions and suggestions are valuable for us to keep improving our CSR management and practice. Please complete and cut out the following form and fax it or mail it to us. We sincerely welcome and appreciate your valuable opinions.

1. Do you think this report reflects major impacts of MCC on economy, society and environment?

Yes ☐ To some extent ☐ No ☐

2. Do you think the identification of stakeholders and their relationship with MCC in this report is accurate and complete?

Yes ☐ To some extent ☐ No ☐

3. Do you think the information disclosure in this report is comprehensive?

Yes ☐ To some extent ☐ No ☐

4. Do you think the information disclosure in this report is readable?

Yes ☐ To some extent ☐ No ☐

## Open questions

1. Do you find any information you are concerned about not disclosed in the report?

2. How do you think the report can be improved?

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